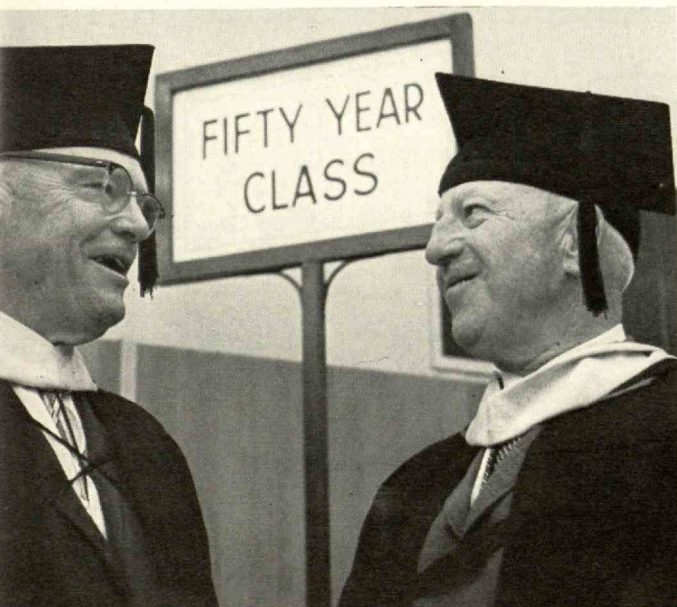
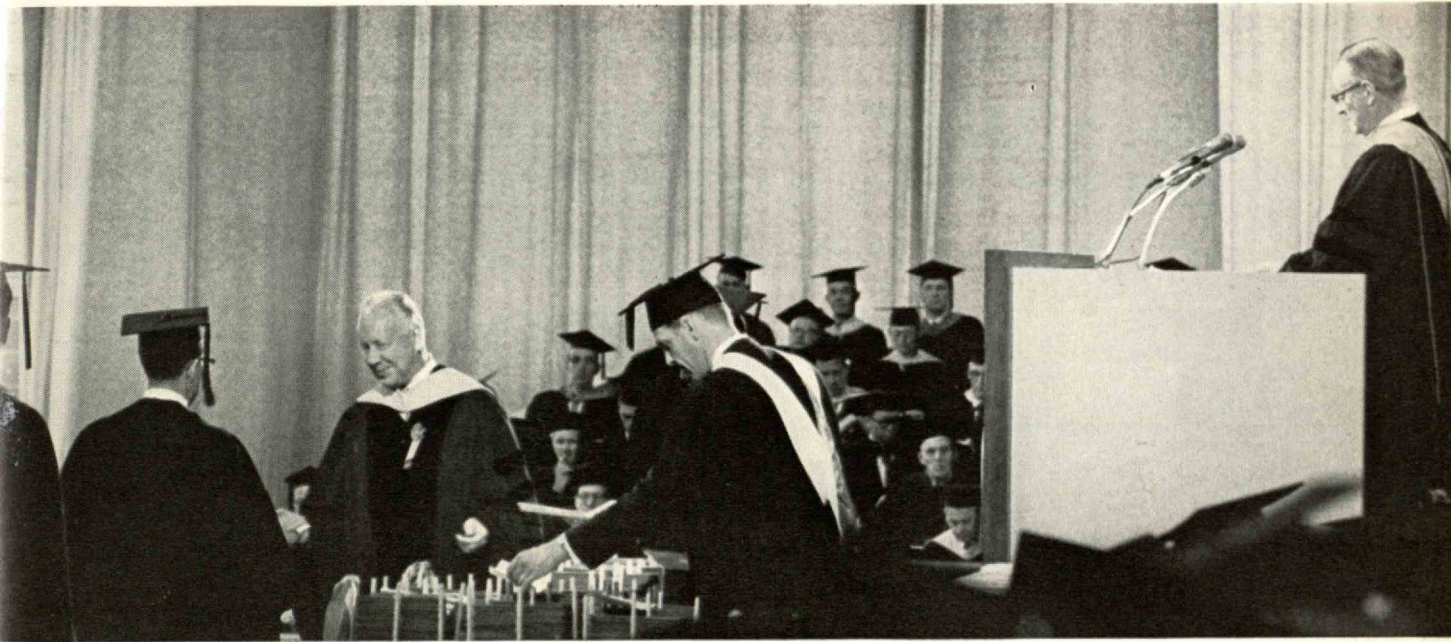


# Technology Review

Edited at the Massachusetts Institute of Technology

July, 1963

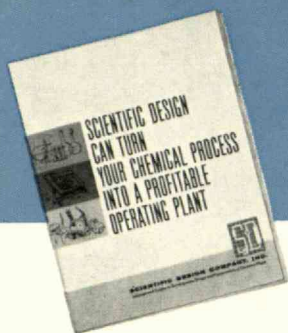


# technology review

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*Model of U238 Uranium Atom displayed at Boston's Museum of Science—photo by Henry Cobb Shaw*

Stone & Webster Engineering Corporation, in cooperation with Westinghouse Electric Corporation, has been selected to design and construct a 500,000 kw nuclear-powered generating station at Haddam Neck for the Connecticut Yankee Atomic Power Company. Similar in technical concept to the Yankee Atomic Electric plant at Rowe, Massachusetts, this new station will produce three times as much power. It is scheduled for completion in 1967 and is expected to compete economically with new oil or coal fired power plants in New England.

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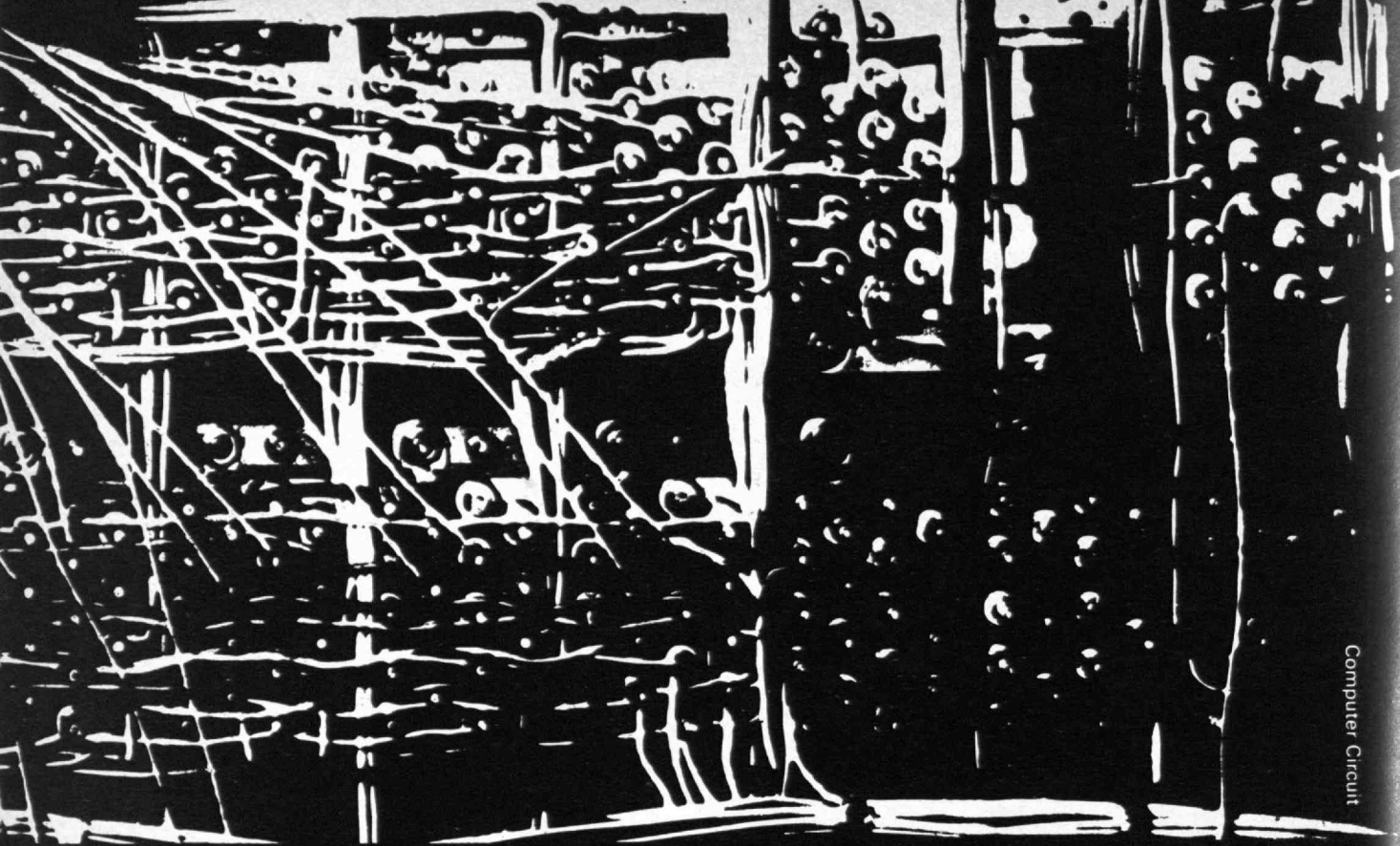
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*PROFESSOR C. STARK DRAPER, '26, saw his son receive an M.I.T. degree on June 7, and took the spotlight himself on June 10 to explain the Apollo guidance system to Alumni—with the visual aids shown above.*

This issue concludes Volume 65 of Technology Review. Number 1 of Volume 66 will be published on October 26, 1963. An index to Volume 65 is now being prepared and will be sent this fall to readers who request it.

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Room 1-281, M.I.T.,  
Cambridge 39, Mass.

The Review's publisher and editor is *Volta Torrey*; business manager, *R. T. Jope*, '28; assistant to the editor, *Ruth King*; and class news editor, *Roberta A. Clark*. Editorial consultants are *J. J. Rowlands*, *Francis E. Wylie*, and *John I. Mattill*. Members of its staff are *Madeline R. McCormick*, *Patricia Fletcher*, and *Maxine Kenny*.

Officers of the Alumni Association of M.I.T. are: *William L. Taggart, Jr.*, '27, President; *Donald P. Severance*, '38, Executive Vice-president; *Carroll L. Wilson*, '32, and *F. Leroy Foster*, '25, Vice-presidents; and *Fredrick G. Lehmann*, '51, Secretary.

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## Contents

July, 1963

The cover shows President Stratton presenting M.I.T. degrees, and Dean Brown calling the roll. The Class of '13 is represented by Edward Hurst and Howard S. Currier; and the Class of '63 by its officers. From left they are Robert E. Vernon, Henry W. Bowman, Stephen P. Kaufman, and L. Robert Johnson.

## Commencement Weekend

### M.I.T. Entertains Its Alumni 18

Their annual day's program shows it is an "uncommon university."

### The Graduation Exercises 21

With traditional ceremony, 1,145 students receive 1,226 degrees.

### The Commencement Address 23

Eugene R. Black describes a new task for today's scientists.

### The Baccalaureate Address 27

Dean Burchard declares 'tis better to be a Hamlet than a Polonius.

## M.I.T. News

### Space Trucks and Poetry 20

They get equal billing on program arranged for Alumni.

### A New Helmet for the Campus 26

An "Elmo" by Dimitri Hadzi is unveiled outside Hayden Gallery.

### An Old-Timer Well Treated 30

The Markle Cyclotron is re-housed and being tuned up for more work.

### A Center for Health Research 32

M.I.T. is to have a new hospital and program for physicians.

### Dipoles Are Orbiting 33

A significant communication experiment gets under way.

## Departments

### Individuals Noteworthy 4

Changes in the Corporation and Faculty and recent awards.

### The Trend of Affairs 15

Lectures and research reports of especial interest this spring.

### New Books 34

Reviews and listings of publications you should know about.

### Institute Yesteryears 61

Items culled from the records by the late H. E. Lobdell, '17.

# Individuals Noteworthy

## Corporation Changes

JAMES B. FISK, '31, and *George P. Gardner, Jr.*, term members of the M.I.T. Corporation since 1959, have been elected to life membership. Dr. Fisk is president of Bell Telephone Laboratories, Inc., and Mr. Gardner is chairman of the board of the United Fruit Company.

New term members whose election to the Corporation was announced at the same time by Chairman James R. Killian, Jr., '26, are *Louis W. Cabot*, President of the Cabot Corporation; *Irénée du Pont, Jr.*, '43, production manager, Film Department, and a director of E. I. du Pont de Nemours and Company; *Luis A. Ferré*, '24, a partner in Ferré Industries in Puerto Rico; *Eugene McDermott*, chairman of the Executive Committee of Texas Instruments Incorporated; and the four men recently nominated for alumni term membership by the M.I.T. Alumni Association: *Elisha Gray*, '28, *Thomas F. Morrow*, '35, *William L. Taggart*, '27, and *Ivan A. Getting*, '33.

Terms of membership were completed in June by *Donald W. Douglas*, '14, Chairman of the Board, Douglas Aircraft Company; *Robert C. Guinness*, '34, Executive Vice-president, Standard Oil Company of Indiana; and *Clarence H. Linder*, former Vice-president of the General Electric Company.

## M.I.T. Club Director

THOMAS P. PITRE will join the M.I.T. Alumni Office this summer on a part-time basis as Director of Club Operations. Dean Pitre has been associated with the Institute for 43 years, and has just retired as Director of Student Aid. He is being succeeded in that post by Jack H. Frailey, '44, who has been head coach of Crew since 1959 and special assistant to the Provost for the last year.

Dean Pitre was responsible for the development of scholarship and loan programs which are now among the largest in the country, and hopes to maintain his ties with Alumni and friends throughout the country.

## Webster Professorship

LAN J. CHU, '35, has been appointed Webster professor of electrical engineering at M.I.T., to succeed Ernst A. Guillemin, '24, who retired this year after 37 years in the Department.

The Edwin Sibley Webster Professorship was established in 1954 as the Department's first endowed chair. The late Mr. Webster of the Class of 1888 was a founder of Stone and Webster, and for many years was an active member of the M.I.T. Corporation.

Professor Chu came to M.I.T. from Shanghai's Chiao Tung University for his graduate work and became an associate professor in 1947 and a professor in 1952. He is noted both for his work in electromagnetic theory and for his teaching.

Professor Guillemin came to the Institute from the University of Wisconsin, studied for his doctorate at the University of Munich, and became an instructor at M.I.T. in 1926. He has specialized in network analysis and synthesis, and generations of students have encountered "Guilleminian problems." He received the President's Certificate of Merit in 1948 for his wartime work and the Medal of Honor from the Institute of Radio Engineers in 1961.

## New Professor

JACK P. RUINA, who is retiring as director of the Advanced Research Projects Agency of the Department of Defense, has been appointed professor of electrical engineering at M.I.T. In addition to teaching and research, he will serve as special assistant to Vice-president James McCormack, '37, and assist Dean Gordon S. Brown, '31.

Professor Ruina is a specialist in the statistical theory of noise and in radar engineering, and has been on leave from the University of Illinois since 1959. While in Washington he received the Flemming Award as one of the 10 outstanding young men in the federal service.

Born in Poland, and a naturalized U.S. citizen, he received his bachelor's degree from City College of New York in 1944, and subsequently his master's and doctor's degrees from the Polytechnic Institute of Brooklyn. He was a Fellow of the Microwave Research Institute at Brooklyn Polytechnic from 1948 to 1950, and a member of the Brown University faculty for four years before going to Illinois.

Professor Ruina is a member of the Institute of Radio Engineers, the American Rocket Society, the American Association of University Professors, and Sigma Xi. He is married and has three children.

## On Alumni Committees

THE M.I.T. Alumni Council, at its May meeting elected: To the Alumni Fund Board, *Parke D. Appel*, '22, and *Carl M. Mueller*, '41; to the Alumni Day Committee, *F. Leroy Foster*, '25, and *Ralph H. Davis*, '31; to the Audit and Budget Committee, *John J. Wilson*, '29; to the 25th Reunion Committee, *George Beesley*, '39, and *Robert A. Bittenbender*, '40; to the Class Reunions Committee, *F. Scott Carpenter, Jr.*, '44, *Walter A. Row, Jr.*, '49, *Robert E. Anslow*, '54, and *Buddy J. Long*, '59; to the Committee on Honorary Members, *Henry A. Morss, Jr.*, '34; to the Committee on Nominations for Departmental Visiting Committees, *William Baumrucker, Jr.*, '29, and *Leroy F. Marek*, '30; to the Committee on Nominations for Alumni Council Representatives of M.I.T. Clubs, *Arthur L. Bryant*, '44, and *Harl P. Aldrich, Jr.*, '47; and to the Personnel Committee, *James L. Baird*, '40, and *Raymond R. Richards*, '43.

## A. G. Woodman: 1873-1963

A CHEMIST noted for his pioneering studies of food poisoning, Professor Emeritus Alpheus Grant Woodman, '97, died on June 5 at his home in Watertown, Mass. Professor Woodman taught at M.I.T. from 1897 to 1939, and revised his still standard textbook, *Food Analysis*, after retiring. He was also the author of several other books and a member of the American Chemical Society.

He is survived by his son, Walter C. Woodman, '25, and daughter, Mrs. Beverly F. Ottaway.

(Continued on page 6)





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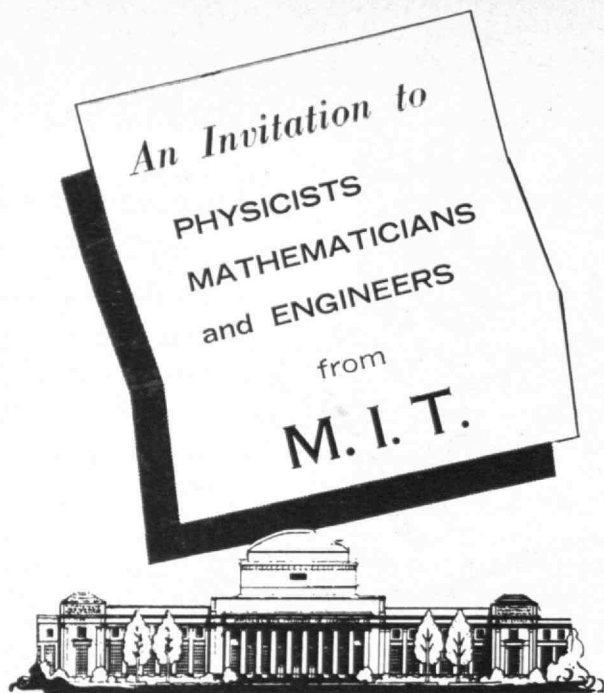
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## Individuals Noteworthy

(Continued from page 4)

### Engineering Awards

THE LUIS DE FLOREZ ('11) Award for ingenuity and creativity in mechanical engineering went this year to *John H. Holly*, '63, for inventing a wheelchair attachment for use on stairs; and the similar award in aeronautics and astronautics to *Peter B. Rhines*, '63, for basic research concerning the mixing of salt and fresh water at different temperatures, and to *Victor D. Scheinman*, '63, for an ultrasonic altimeter for controlling the lift of a hydrofoil. Honorable mention went to *Ronald D. Rothchild*, '63, *David B. Russell*, Jr., '64, *Steven R. Croopnick*, '64, *Ramunas J. Skrinska*, '64, and *Ronald W. Matlin*, '63.

The Blonder-Tongue Foundation Awards for scholastic achievement in electrical engineering went to *Stephen R. Chinn*, '64, and *Shang-Tah Shih*, '64, and honorable mention to *Theodore J. Cruise*, '64.

Other departmental prizes included the James Means Memorial Prize for excellence in flight-vehicle engineering, to *Xenophon P. Stathatos*, '63, and *Henry Ziegler*, '63; the Henry Webb Salisbury Award, to *Charles P. Gardiner*, '63; the American Society of Mechanical Engineers Award to *Melvin L. Potash, Jr.*, '63; the James F. Lincoln Arc Welding Award to *Alvaro Mendoza*, '63, and *G. Steffen Wall*, '63; and Wunsch Foundation Awards to *Juan H. Crawford*, '63, *John P. Downie*, '64, *Howard E. Kirkendall*, '63, and *William A. Ribich*, '64.

### Five-Star Filmer

THE Motion Picture Division of the Photographic Society of America (world's largest photographic society) lists *Oscar H. Horovitz*, '22, as its only five-star (highest possible rating) motion picture exhibitor. Mr. Horovitz now has won 70 awards in national and international competitions.

### Liaison Officer

JACK V. DRAKE, '54, has become an industrial liaison officer at M.I.T., following employment since graduation by the National Steel Corporation, the Xerox Corporation, and Baird-Atomic, Inc. At the latter firm he was responsible for materials engineering in aerospace projects.

(Continued on page 8)

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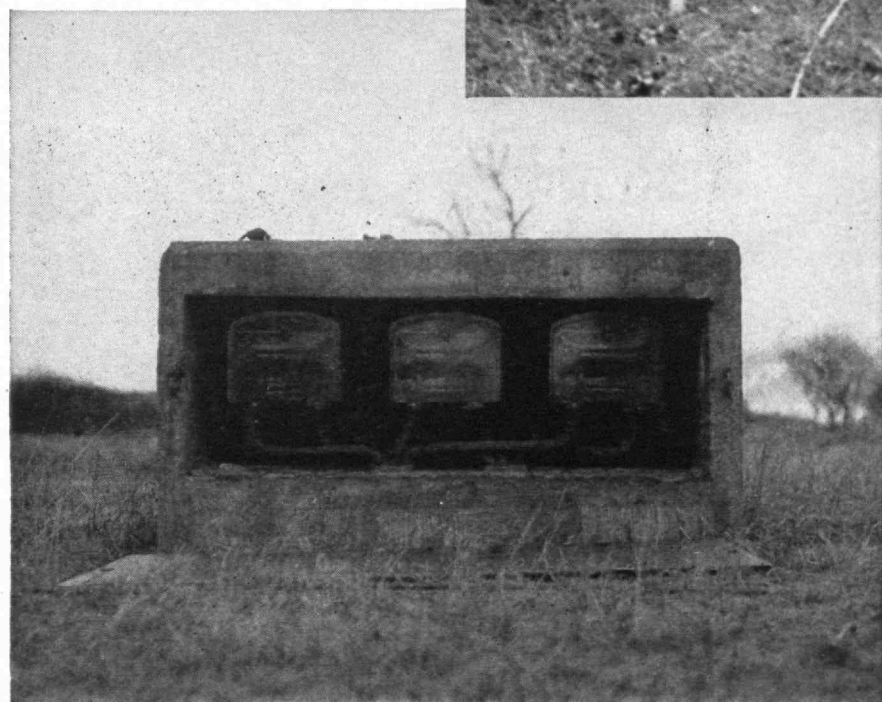


▲ Photo taken about 1935 shows 5 kv Kerite distribution cable being "plowed in" in the Utica, N.Y. area. It was a 2-conductor #6AWG with concentric copper wires and jute outer covering.

◆ Concrete transformer housing installed about 1928 to serve underground distribution on Fisher's Island, N.Y. (off the coast of Connecticut). The cable was 2300 v, jute-covered Kerite and is still operating.

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## Kerite Cable



## Individuals Noteworthy

(Continued from page 6)

### Honors to Students

KARL TAYLOR COMPTON Awards were presented this year to *William T. Brydges, 3d, G, James A. Champy, '63, James E. Evans, '63, Peter T. Van Aken, '63*, and two organizations, the M.I.T. Hillel Society headed by *Howard M. Pielet, '63*, and the Intercollegiate Conference Committee led by *Stephen P. Kaufman, '63*.

Other awards at the annual spring convocation on May 15 included the Scott Paper Foundation Leadership Award, to *Robert L. Blumberg, '64*; and the Outstanding Freshman Award by Tau Beta Pi to *Dennis W. Sivers, '66*.

The Clifford Award for the athlete of the year went to *Hans B. Aasnaes, '63*; the Cochrane Award to *Robert E. Vernon, '63*; and the Eastern College Athletic Conference Merit Medal to *Thomas P. Gerrity, Jr., '63*. Others receiving athletic and athletic administration honors were *Henry J. Modetz, Jr., '64; William S. Brown, '66, James E. Evans, '63, Thomas P. Gerrity,*

*Jr., '63, Richard M. Harris, '63, John J. Lamberti, Jr., '63, Robert N. Harvey, '64, and Robert G. Felix, '63*.

Baton Society Award winners were *Joseph Goldfarb, '63, and Edward Kanegsberg, '63*.

### Military Honors

AT THE annual Military Day exercises on Briggs Field this year, the Department of the Army presented Superior Cadet Awards to *Maurice P. Andrien, Jr., '63, Leonard G. Buckle, '64, Woodrow M. Avalon, Jr., '65, and Edmund M. Notzon, 3d, '66*.

The Professor of Naval Science Award went to *Lawrence H. Pitts, '63*, and Professor of Air Science Awards to *Kenneth L. Weyler, '63, Edward L. Arnn, Jr., '64, John D. Edgar, '65, and Malcolm E. Wheeler, '66*.

### Postdoctoral Fellows

NATIONAL Academy of Sciences-National Research Council fellowships for postdoctoral research have been awarded to *L. Gabriel Stolzenberg, '61*, to work at the Hebrew University in Jerusalem; *Roe W. Goodman, '63*, to work at Har-

vard; and *George P. Moore*, to work at M.I.T. under the direction of Professor Walter A. Rosenblith.  
(Concluded on page 40)

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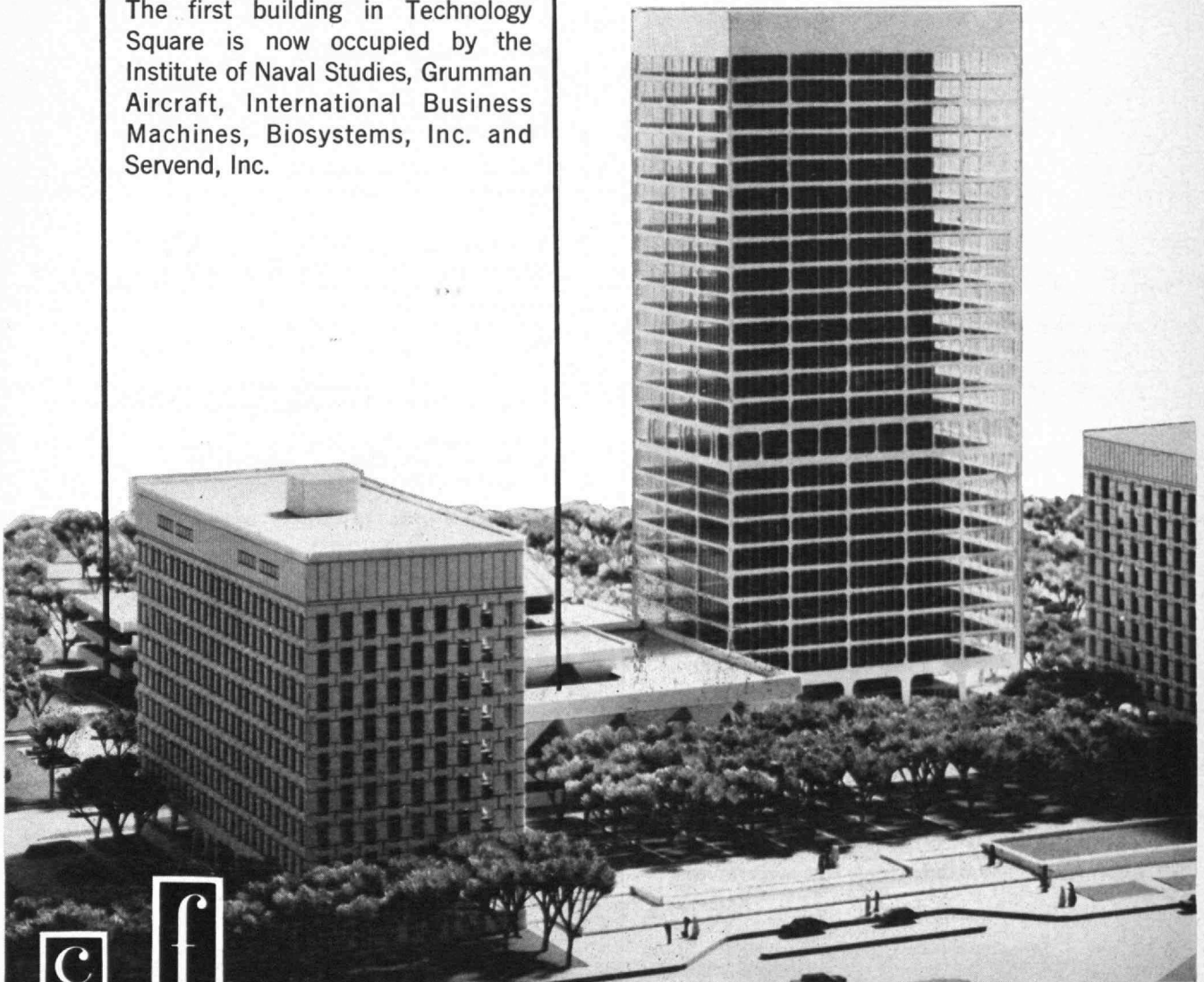
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# **Index to Advertisers**

**July, 1963**

<i>Advertiser</i>	<i>Page</i>
Aerofin Corporation .....	45
Aerospace Corporation .....	39
Albert Pipe Supply Company, Inc. ....	49
Allegheny Ludlum Steel Corporation ..	13
Atomic Personnel, Inc. ....	44
Avery and Copeland, Inc. ....	10
Barney Corporation, W. J. ....	8
Barnstead Still and Sterilizer Company ..	53
Batson Company, C. A. ....	49
Belock Instrument Corporation .....	47
Better Packages, Inc. ....	53
Boston Insulated Wire and Cable Company ..	50
Boston Manufacturers Mutual Insurance Company ..	55
Bradley and Company Inc., R. M. ....	56
Brown and Sharpe Manufacturing Company ..	45
Cabot, Cabot and Forbes Company .....	9
Chauncy Hall School .....	59
Coburn and Company, William H. ....	59
Converse Rubber Company .....	5
Curtis Universal Joint Company, Inc. ....	53
Dexter Chemical Corporation .....	45
Diefendorf Gear Corporation .....	51
Fairfield and Ellis .....	41
Fitchburg Paper Company .....	12
General Motors Corporation .....	60
General Radio Company .....	Back Cover
Gray Corporation, Peter .....	51
Hart Products Corporation, The .....	49
Hawkins and Sons, Company, H. H. ....	40
Hoechst-Uhde Corporation .....	Inside Back Cover
Holmes and Narver, Inc. ....	43
Hotel Corporation of America .....	49
Hubbell Inc. Harvey .....	51
ILG Electric Ventilating Company .....	8
Instron Engineering Corporation .....	42
Kelek Company, The .....	47
Kerite Company, The .....	7
Kusko, Inc., Alexander .....	56
Lockheed Missiles and Space Company .....	14
Main, Inc., Chas. T. ....	56
Marden Corporation, Edward R. ....	59
M.I.T. Instrumentation Laboratory .....	6
M.I.T. Lincoln Laboratory .....	2
McGraw-Hill Book Company .....	46
McQuay Inc. ....	35
Melpar Inc. ....	57
Meyne Company, Gerhardt F. ....	47
Norcross Corporation .....	47
Professional Cards .....	58
Puerto Rican Cement Company, Inc. ....	52
Richards Company, Inc., Arklay S. ....	54
Scientific Design Company, Inc. ....	Inside Front Cover
Sears Inc., Thomas E. ....	44
Solitron Devices, Inc. ....	11
Sprague and Henwood, Inc. ....	51
States Electronics Corporation .....	10
Stevens-Arnold Inc. ....	54
Stone and Webster Engineering Corporation ..	1
Syska and Hennessy, Inc. ....	59
Technical Marketing Associates, Inc. ....	44
Tredennick-Billings Company .....	59
Tyco Laboratories, Inc. ....	48
United States Trust Company .....	37
Whirlpool Corporation .....	43

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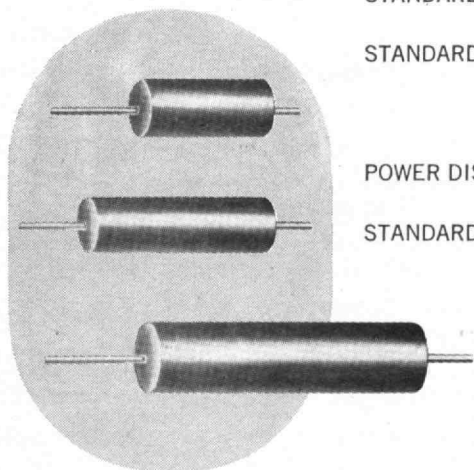
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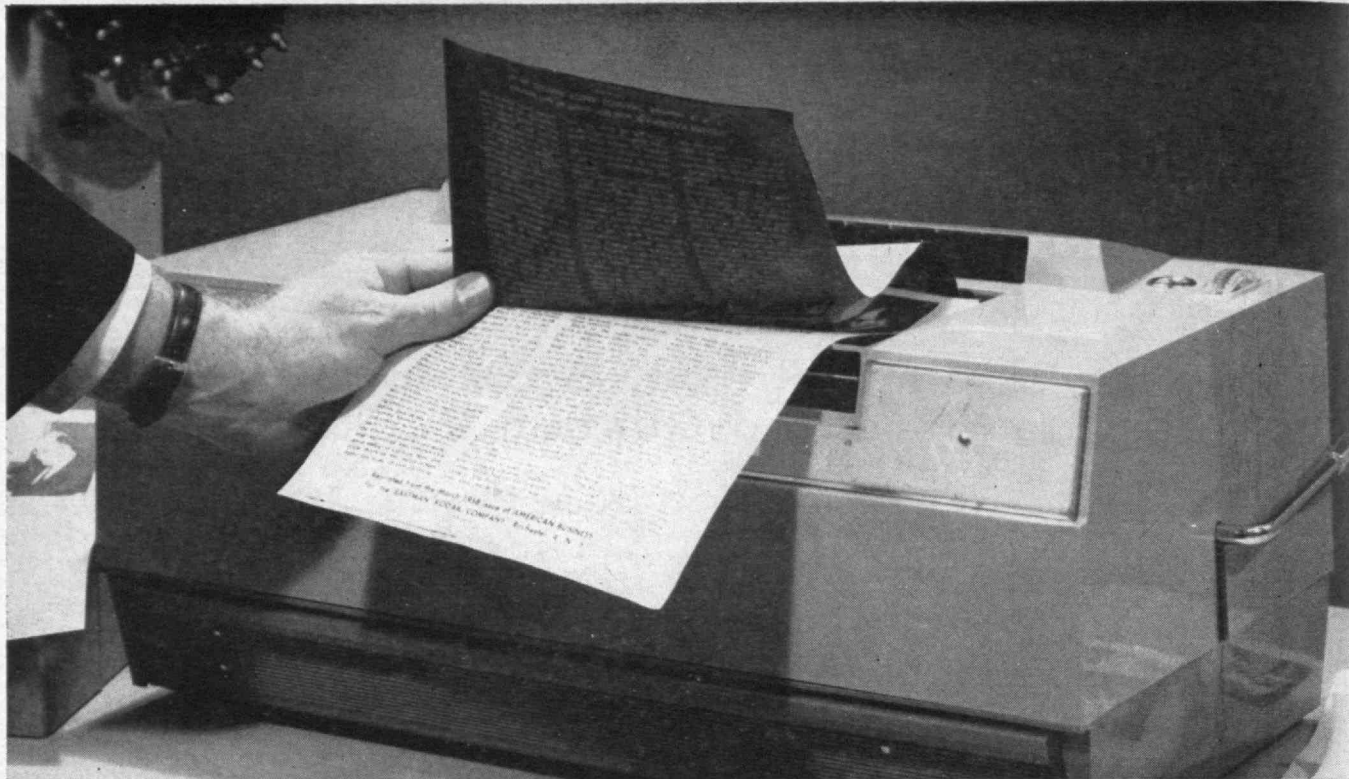
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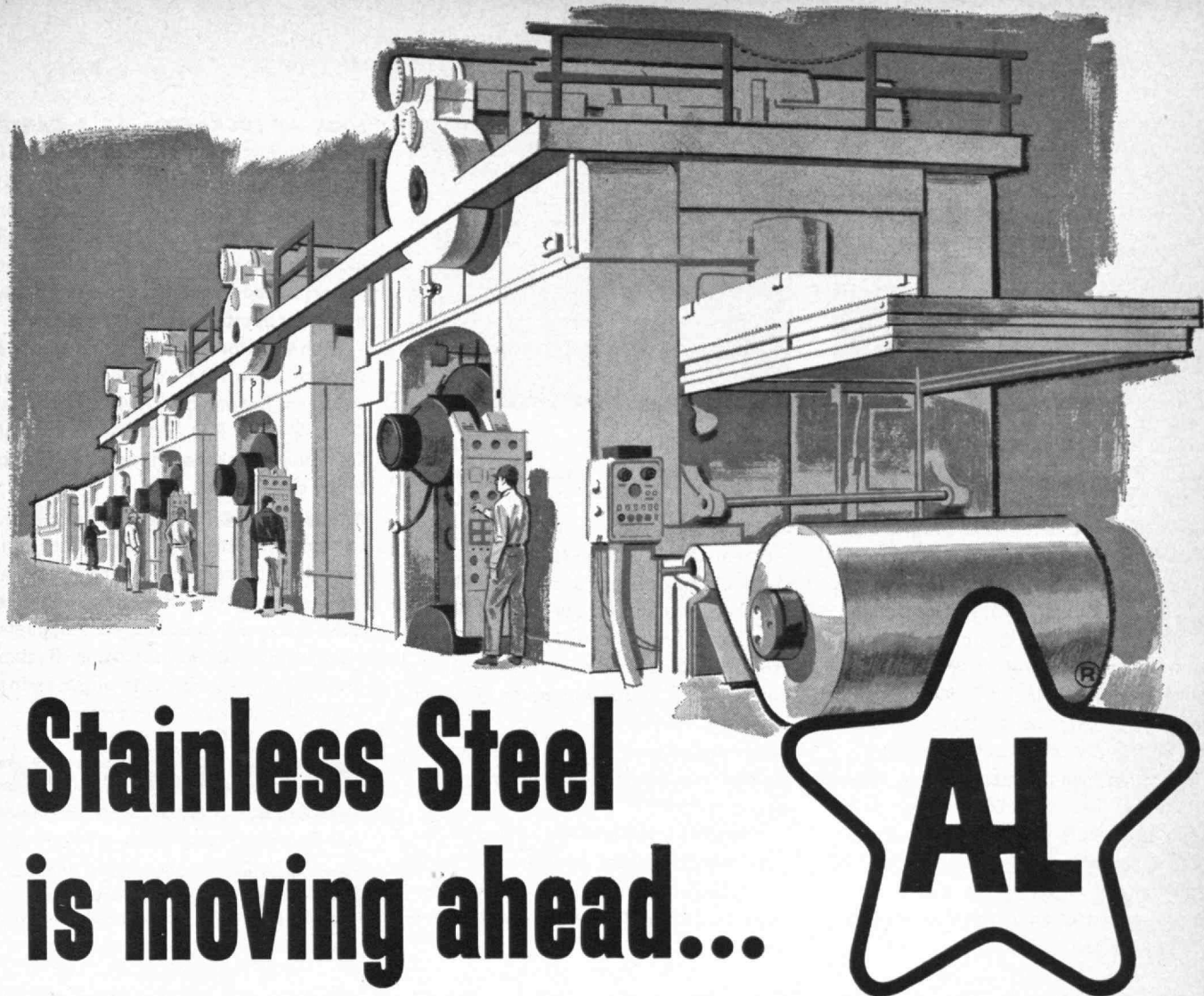
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# Stainless Steel is moving ahead...

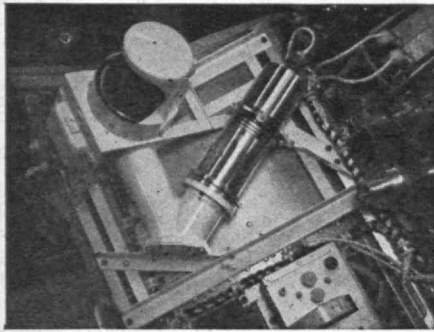
**And Allegheny Ludlum is adding impetus!** A recent article in a national business and financial publication noted that the special steel companies have grown faster than the industry as a whole. It reported, "Growth for stainless as a whole, discounting the special capital investment of the mid-fifties, would seem to be 4% per year . . . Striving to quicken the pace, Allegheny Ludlum, with a new-style research center at Brackenridge in western Pennsylvania that is able to make melting and rolling experiments under virtual mill conditions, adds titanium to chrome steel—and comes up with a long-life automobile muffler, the MF-1."

The above reference is to only *one* of many developments to come from research at Allegheny Ludlum. Research and production, two of the big reasons why Allegheny is No. 1 independent producer of stainless steel, combine to form a team that provides products and customer service second to none.

## ALLEGHENY LUDLUM STEEL CORPORATION

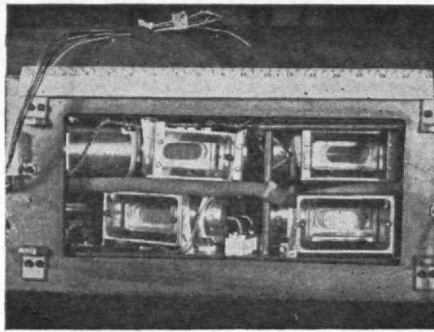
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Here, in Lockheed Missiles & Space Company's Physical Sciences Laboratories, scientists are engaged in a comprehensive space physics research program embracing experimental and theoretical work in space radiation, aurora, atmospheric structure, geomagnetic micropulsations, x-ray astronomy, and the propagation of electromagnetic waves in space. Experimental programs include the measurements of geophysical and space properties, both in space and in the laboratory.

Currently, measurements of variations on the earth's magnetic field are being made at remote islands in the Pacific Ocean, providing clues to the effect of solar activity on its shape and stability. The influence of solar wind on the geo-



magnetic field is also being investigated in laboratory experiments, by bombarding magnetic fields with clouds of highly ionized gases.

Scientists at Lockheed are engaged in a continuing program of designing and placing density gages, mass spectrometers, ion traps, and similar instruments on space vehicles to measure the density, composition, and temperature of matter in space. These experiments lead to a better understanding of the chemical reactions occurring in the atmosphere high above the earth.

Important investigations of the low energy x-rays emitted by stars are being carried out and interpreted to give information on the structure of stellar coronas.

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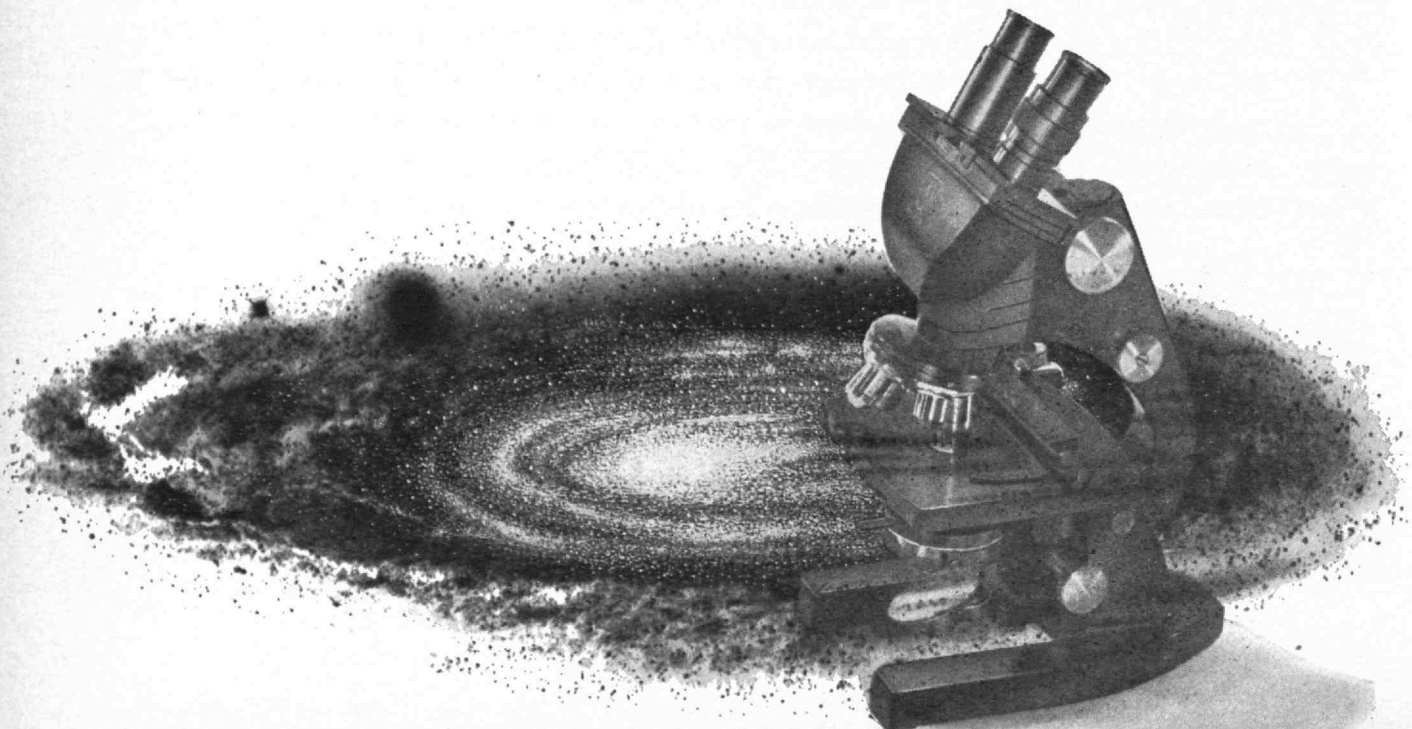
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# **LOOK AT LOCKHEED IN SPACE PHYSICS:**

*Continuing investigation of matter and forces in space*





# Trend Of Affairs



## Who Has the Picnic Basket?

THIS YEAR'S Arthur Dehon Little Memorial Lecturer was the British novelist, mythologist, and poet, Robert Graves, and his lecture was a plea for "the scientifically imponderable."

"You most advanced technologists," he told his Kresge Auditorium audience, "remind me of a school picnic, when an adventurous young gang ran off through the woods, blazing no trail, taking with them all the Coca Cola, and thoughtlessly leaving their friends miles behind to lug along the baskets of beef sandwiches, cookies and blueberry pie. Yes, you want to explore; and I won't pretend that love of exploration has not been one of my own main motive forces. But the first rule for explorers should be: keep in touch with slower members of the group—at any rate with those in charge of the picnic basket!"

When, he continued, the adventurous gang finds their compass needle whirling madly around, they share out the Coca Cola, sing a song of spacemanship to restore their courage, and push on. "They are not

*A SILVER TROWEL was given to President Julius A. Stratton, '23, by Henry W. Bowman, '63, representing the Undergraduate Association, at the Compton Award Convocation this spring. Ground was broken at the ceremony (pictured above) for a new M.I.T. Student Center.*

likely to meet a poet in those wilds; and even if they do, the sole exchange of greetings can be a polite 'Hi.' Yet if a stray anthropologist happens to cross their path, they would be wise to consult him. Anthropologists are a connecting link between poets and scientists. . . . To understand how savages think and act, the thesis that there are such things as magic, oracular prophecy and divine possession has to be conceded. . . .

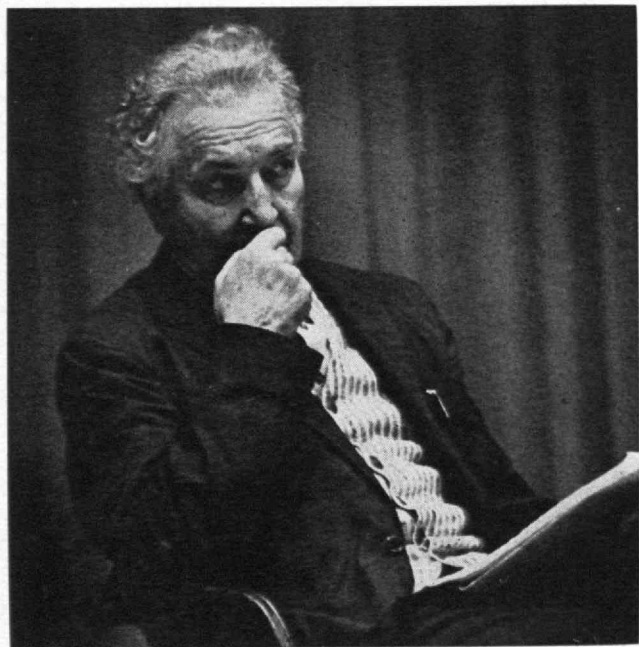
"A study of anthropology would remind the student that civilization has been developing at different speeds in different parts of the world for several thousand years. . . . I should like you to feel nostalgic about the picnic basket that got left behind."

## To Study Arms Control

THE U.S. Arms Control and Disarmament Agency has made two contracts with M.I.T. for studies of disarmament and arms control. They are the agency's first contracts for such purposes and total \$210,000. The research will be done in the M.I.T. Center for International Studies, directed by Professor Max F. Millikan, and will be supervised by Professor Lincoln P. Bloomfield.

One contract, for \$65,000, calls for an examination of Soviet motivations and an analysis of Soviet interest to determine what objectives the Soviets believe would be served by various arms control and disarmament measures. The impact of selected measures will be studied, especially in the context of the changes, if any, in Soviet practices and ideology which acceptance of such measures would require. This study is to be concluded in December, 1964.

The other contract, for \$145,000, calls for a study of the problems of regional arms control and disarmament arrangements for Latin America, Africa, and the Middle East, and is to be concluded by September, 1964. It will deal with possibilities for arms limitation in the three regions and the relationships between regional and global measures.



Robert Graves, poet among scientists, in Kresge Auditorium, for the Arthur Dehon Little Lecture.

## The Eta Meson Is Traced

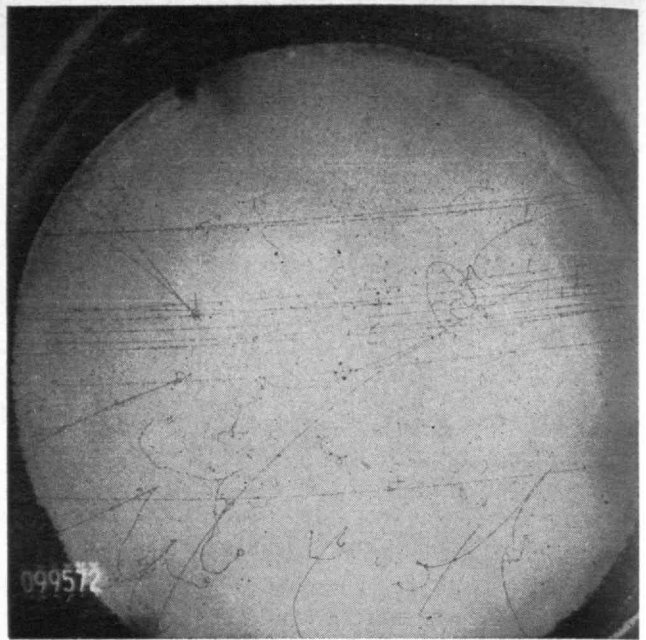
EXPERIMENTAL physicists now have described half a dozen different kinds of mesons, intermediate in mass between protons and electrons, for the theorists. These particles, designated by Greek letters, appear and disappear very quickly. The sixth one, the Eta, was not discovered until 1961, and until recently there was doubt about its properties. It has about half the mass of a proton and its mean life is less than one- $10^{15}$ th of a second. It has no electrical charge and leaves no tracks in a bubble chamber. Nevertheless, the Eta's spin and other properties now have been learned from a bubble chamber built at the M.I.T. Laboratory for Nuclear Science and used with the Cosmotron at the Brookhaven National Laboratory.

When an Eta meson decays, it may produce Pi mesons or a pair of gamma rays. The latter are similarly elusive. But if a gamma ray comes close to a large electrical charge, it produces a positron and an electron. These new charged particles do leave tracks in a bubble chamber which can be photographed.

The chamber used to study the Eta meson was made sensitive to gamma rays by adding methyl iodide to the "soup" of hydrocarbons in it. The iodine provided the electrical charges needed to make gamma rays produce positrons and electrons. With this chamber, more than 300 pictures were taken of positron and electron tracks diverging from points at which gamma rays had stopped being gamma rays.

But how could anyone be sure that the gamma rays that vanished where those pairs of new particles appeared had come from Eta mesons? Why might they not have come, say, from decaying Pi mesons, and just happened to be going by when the pictures were being taken?

Proof of the descent of many of the gamma rays from Eta mesons was obtained by careful analysis of the pictures: Eta mesons, being heftier, go slower than Pi mesons. Hence, when an Eta turns into a couple of gamma rays the latter seem to diverge at a greater angle than two gamma rays created by the decay of a faster Pi meson. Knowing this, the physicists looked for sets of two pairs of electron-positron tracks in their cloud chamber pictures and measured the distances between such sets. Many sets of two pairs were so far



One of the photos used to find the Eta meson's properties.

apart that the gamma rays responsible for their appearance must have come from Eta mesons. Working backwards then, the physicists found what the spin and other properties of the Eta mesons must have been.

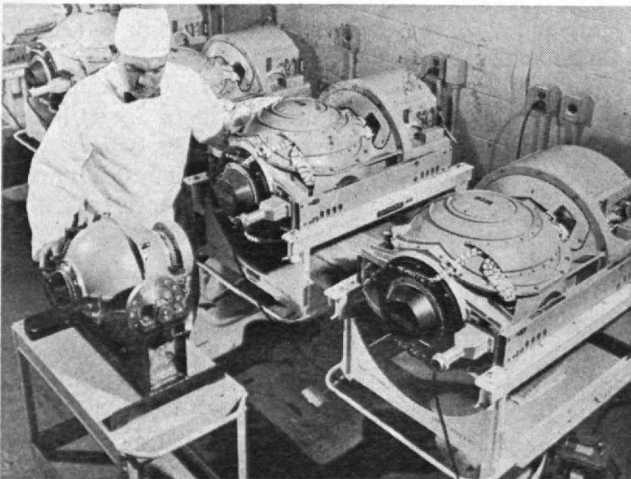
The idea of adding methyl iodide to the bubble chamber's soup came from the senior thesis work of Richard K. Yamamoto, '57, and the further detective work that followed was done by a group of physicists from several institutions. It included Associate Professor Irwin Pless and Assistant Professor Lawrence Rosenson of the M.I.T. Laboratory for Nuclear Science. This laboratory's participation in such research is made possible by Atomic Energy Commission support.

Much of the elementary particle physicists' work nowadays, says Dr. Rosenson, is like that of classical zoologists in that it consists of observing and classifying queer things. The determination of the properties of the Eta meson filled an annoying gap in their knowledge of mesons, and thus took them a step nearer to being able to explain the relationship between mesons and such more familiar particles as protons and electrons.

## The Evolution of Instruments

ELMER A. SPERRY, JR., who helped his father develop the gyroscope and himself has many patents, was this year's lecturer in memory of Lester D. Gardner, '98. Again the Gardner Lecture was a nostalgic occasion that brought together in M.I.T.'s Little Theater many of aviation's most noted pioneers and scores of younger men who are concerned with such modern devices as the Polaris guidance systems (pictured at the left).

Mr. Sperry recalled the crudity of the first flyers' instruments, panels that shook so much that even the clock's hands fell off, and how lack of business led the Sperry Company to close down its aviation-instrument department after World War I. Nowadays, he concluded, electronic devices have become both more complex and more reliable. Duplicate instrument systems with automatic fail-safe arrangements that are being tested now, he hopes, will be "completely reliable."



How the Polaris missile guidance system has been reduced in size is shown in this photo of Mark II alongside Mark I's.



## To Help the Blind Read

A STENOYPIST records words on tape in a phonetic code by depressing her machine's keys. At M.I.T., Lieutenant Colonel Geoffrey Cheadle of the Air Force recently has been investigating the possibility of reversing the process—to enable blind persons to read faster with their fingers.

Braille is read with one finger and the normal reading rate is from 70 to 90 words a minute. An advanced stenotypist using all 10 fingers can record from 200 to 300 words a minute. It seemed apparent to Colonel Cheadle that a blind person might read more rapidly by using all of his fingers, too, and he built experimental equipment to test the idea as a thesis project.

This equipment includes a stenotype "reading" machine driven by a tape. That tape is produced from an ordinary stenotype tape by a digital computer and decoder. The reading machine has electromagnets beneath its 22 keys, and the tape fed to it causes those keys to repeat the motions of the keys of the machine on which the original tape was made.

The Stenotype Institute of Boston and a stenotypist, Miss Sandra Lee Potter, have worked with Colonel Cheadle. They have met both expected and unexpected difficulties, but have obtained strong indications that the use of many fingers is a promising way to go.

Three of an ordinary stenotype machine's keys represent infrequently used characters and an operator's hands do not touch them when in the resting position, so a code had to be worked out that eliminated them. There are two standard stenotyping codes, and inevitable personal transcribing variations, which also posed problems. Miss Potter, nevertheless, learned to read lists of random words with increasing speed as the work progressed, and Colonel Cheadle believes the system can be further improved.

A graduate of West Point with a master's degree from Purdue, Colonel Cheadle has been at the Institute as a graduate student of electrical engineering since 1960. He will be assigned now to the Directorate of Advanced Development, Headquarters USAF, in Washington. His M.I.T. work was part of the Research Laboratory of Electronics' sensory aids program.



Professor Wiener with cigar and friends at the Waldorf.



Colonel Cheadle and Miss Potter using experimental tapes.

## Waves in the Blood Stream

IT HAS long seemed appropriate to view the heart as a biological pump. Yet an engineer designing a circulatory system such as the heart serves would be more likely to provide for a series of pumping stations than to rely wholly on a single massive pump at the system's head. Was the human circulatory system poorly designed?

Recent studies by Professor Erik L. Mollo-Christensen, '48, in the Department of Aeronautics and Astronautics at M.I.T. have shown that it was not—but the common concept of what the heart does may be inadequate. The heart not only puts out energy the way a pump does, in the form of a rise in pressure multiplied by mass flow, but also sends out waves that transmit energy. These waves serve the circulatory system the way booster stations might.

Interference with the mechanism by which the waves are transmitted would be likely to affect the circulation of the blood. Changes in the artery walls such as some diseases produce could cause such interference.

By modifying an instrument now used to measure blood pressure, it may be possible to develop a method of measuring or at least indicating the state of arterial walls. This possibility is being explored now in co-operation with a nearby institution.

## Mathematician Emeritus

ONE of the most widely hailed guests at the recent Second Century Fund Victory Dinner was a newly elected honorary member of the M.I.T. Alumni Association, Institute Professor Emeritus Norbert Wiener.

Retirement has not changed his routine. This spring he has been teaching graduate students, engaged in intensive studies at his blackboard, patrolling the Institute, lunching at the Faculty Club, and preparing for another trip abroad, as usual. He has also been brooding, of course, about another autobiographical book. This one, he confides to friends, will be called *Aftermath*.



# An "Uncommon University"

## Entertains Its Alumni

*They study lasers, magnets, computers, paintings, and Prokofiev  
—and three classes make reunion gifts totaling \$1,145,673*

M.I.T.'s 29th Alumni Day, June 10, brought more than 1,200 visitors to the Cambridge campus for a double feature: A program of lectures and demonstrations in science and engineering in the morning, followed after lunch by one about painting, poetry, and music.

Seventeen classes got together in New England again that weekend, and three of these groups announced reunion gifts to the Institute, at the annual Alumni Day luncheon in the Great Court, that totaled \$1,145,673. These gifts were:

**From the Class of '13 . . . \$184,244**  
**From the Class of '38 . . . \$309,518**  
**From the Class of '23 . . . \$651,911**

Chairman James R. Killian, Jr., '26, called the gifts a sign of the devotion of Alumni to the aims of M.I.T.; and President Julius A. Stratton, '23, emphasized the importance of adhering to the Institute's mission—to teach and to contribute to the enlargement of knowledge.

M.I.T. is noted both in this country and abroad, Dr. Stratton said, for the rigor and quality of its work and for the wide base of its efforts. These characteristics, he declared, must be safeguarded by those who shape and control its future in this period of rapid growth.

Professor Richard M. Douglas, Head of the Department of Humanities, spoke of M.I.T. as an "uncommon university," and the whole day's program presented by a committee headed by Gregory Smith, '30, demonstrated this.

William L. Taggart, Jr., '27, presided at the luncheon and presented certificates of honorary membership in the Alumni Association to Institute Professor Emeritus Norbert Wiener, for 44 years an intellectual stimulant to students, and to Mrs. Eleanor McNidder Jack, the widow of Professor James Robertson Jack, Head of the Department of Naval Architecture and Marine Engineering from 1919 to 1936. She has



**Class Secretary Fred Goldthwait, '05, at left, consulted his notes in conference with Andrew Fisher, '05.**

chaperoned more student affairs than anyone else in the school's history.

Mr. Taggart also presented a gavel to the Honorable Robert H. Winters, '33, the first Canadian elected to the Association's presidency. He is president of the Rio Tinto Mining Company of Canada, Ltd., the world's largest producer of uranium ore, and from 1953 to 1957 was his country's Minister of Public Works.

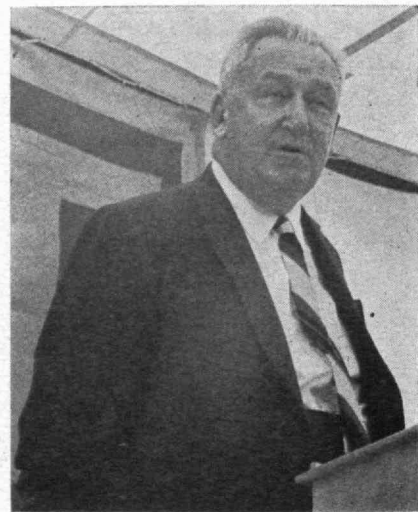
Matt Kashuba of the National Aeronautics and Space Administration described the "space trucks" set up in Building 10, and showed a new film of the proposed landing on the moon. Professor C. Stark Draper, '26, described the guidance system on which M.I.T. is working for that venture, and asked himself



**Albert O. Wilson, Jr., '38, reported one of the largest 25-year class gifts in the history of the Institute.**



**Horatio L. Bond, '23, said bequests and other gifts would make the total from his classmates \$10,000,000.**



**William R. Mattson, '13, called his classmates' gift a dividend on the Institute's investment in them.**



**P. Y. Tang, '23, reported generous support of the Institute by his 40 fellow Alumni now in Hong Kong.**



**Mrs. Eleanor McNidder Jack was welcomed into honorary membership in the M.I.T. Alumni Association.**



**Edward S. Chapin, '98, planned the reunion of the senior group among classes holding reunions this year.**

"Why try to help somebody go to the moon?" The real reason, he said, is "to keep our technology in balance with that of any potential enemy."

In the Compton Lecture Hall, Professor Perry A. Miles flashed optical masers for the visitors and explained how they operate with the help of ripples on a tank of water. Professors Robert W. Mann, '50, and Steven A. Coons, '32, reported in the same hall on computer-aided design; and over at the new National Magnet Laboratory, Assistant Director Donald T. Stevenson, '50, and his associates showed the visitors its features.

Both Dean John E. Burchard, '23, and Professor Roy Lamson, joined Professor Douglas and members of his faculty in describing the

work of the School of Humanities and Social Science.

Professor Robert O. Preusser showed slides of unconventional pictures made in extraordinary ways from unusual materials.

In the Kresge Lobby, there was an exhibit of photography by former students, and on its stage Professor Norman N. Holland, Jr., '47, led a discussion of a poem by today's students (see next page). Professor Klaus Liepmann concluded the humanities program by telling the visitors what to listen for that evening when Arthur Fiedler conducted the Boston Pops Orchestra playing Prokofiev's "Classical" Symphony, Op. 25. The Pops concert followed a reception in the Armory and the banquet in Rockwell Cage, and drew, of course, a nearly full house.

### **A Center in New York**

A NEW M.I.T. Alumni Center is being opened now at the United Engineering Center in New York as a focal point for activities of the Institute's Alumni in the city. It will have a full-time Executive Secretary, a spacious lounge, and the privilege of using many other Engineering Center facilities.

The United Engineering Center has what is considered the most comprehensive engineering library in the world and rooms suitable for a variety of meetings, including luncheons and dinners. Membership in the M.I.T. Center is open to all Alumni and is tax deductible.



**Mrs. Charlotte Sage, '13, at right, mother of Nathaniel M. Sage, Jr., '41, and U. A. Whitaker, '23, Corporation member, were among the guests at the commencement luncheon.**



**From left: Brigadier Lionel Lemaire, '13 (in rear), G. Philip Capen, '13, R. Charles Thompson, '13, Mrs. Capen, and Charles E. Trull, '13, noting changes in campus model.**



# Space and Poem Get Equal Study

**B**OTH astronautic and poetic capsules were diagnosed at M.I.T. on Alumni Day. A class discussed:

## A SICK ROSE

*O Rose, thou art sick!  
The invisible worm  
That flies in the night  
In the howling storm,*

*Has found out thy bed  
Of crimson joy,  
And his dark secret love  
Does thy life destroy.*

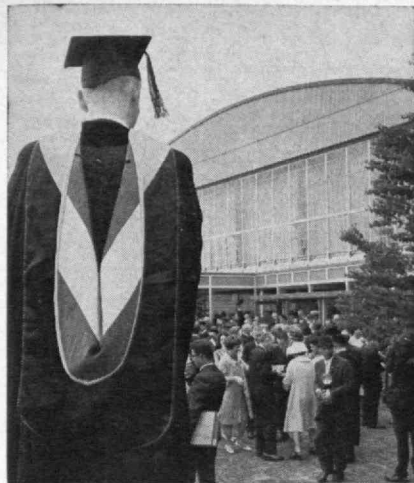
The class met on the Kresge stage to ponder these lines—written by William Blake in 1794—before an audience of former students, many of whom were still engrossed in explaining space vehicles' characteristics to their families and guests.

Yet they cried "louder" when Associate Professor Norman Holland, '47, and today's students began arguing about what the worm and rose could symbolize. Professor Holland wrote appropriate suggestions on the blackboard, but ruled firmly that the worm and rose could not symbolize " $\text{Fe}_3\text{O}_4$  and Fe," or "humanities and M.I.T."



One of the space vehicle models exhibited below M.I.T.'s Great Dome.





# Graduation Exercises

## Follow Tradition

*M.I.T. gives 1,226 degrees to 1,145 students from 42 countries, and honors Walter Godchaux, 3d, '60, for his teaching of biology*

**T**HE Massachusetts Institute of Technology gave degrees to 1,145 students on June 7 this year at its 97th graduation exercises. More than 3,000 parents, other relatives, and friends were present.

It seems, said the President of the Class of '63, as though everything at M.I.T. from cyclotrons to coeds is being rehoused. But the commencement exercises were in the familiar setting of Rockwell Cage, televised as they have been for several years in Kresge Auditorium for latecomers, and followed by the traditional family party in the Great Court.

The speaker of the day was Eugene R. Black, former President of the World Bank, and his address was a plea to scientists and engineers to elevate the standards of living of four-fifths of the non-Communist world's people. (It is reported on pages 23 to 25.)

The one award formally bestowed at M.I.T. graduation exer-

cises in addition to the degrees is the Goodwin Medal for "conspicuously effective teaching." Walter Godchaux, 3d, '60, son of Walter Godchaux, Jr., '35, of New Orleans, received it this year for his teaching of biology.

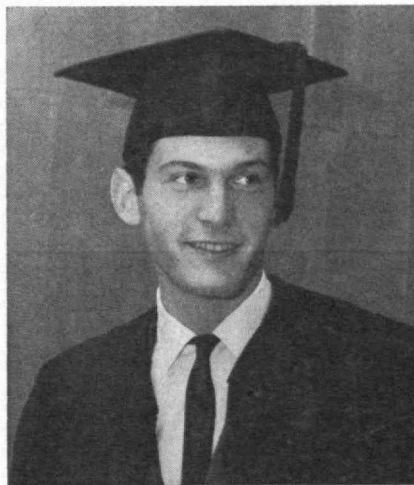
The 1,226 degrees granted included 108 doctorates, 58 advanced engineering degrees, and 349 master's degrees. One student received three degrees and there were 80 who each received two.

The graduates represented 42 countries. They included sons of Professors C. Stark Draper, '26, Bertram E. Warren, '23, and Lan J. Chu, '35, and several other Alumni. Eleven women, including a daughter of Arra S. Avakian, '33, received bachelor's degrees, and seven others received advanced degrees.

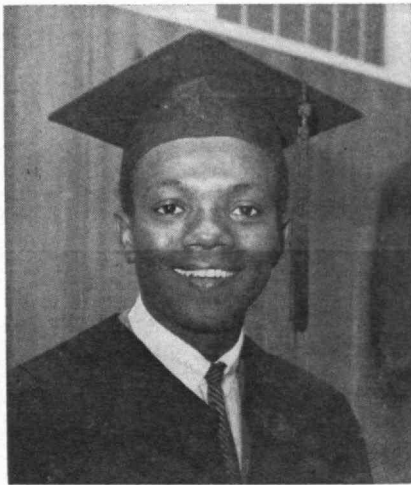
President Julius A. Stratton, '23, presented each degree personally as the Deans of the Institute's five Schools called the recipients' names.

This class, President Stratton said in his customary charge, has been in many respects a special one for him. "You came to us as freshmen," he recalled, "in the fall of my first year as President. . . . I have had frequent opportunities to speak to you about the purpose of M.I.T., and occasion to meet many of you as friends. . . . From my windows I can see how late the lights burn in Senior House and East Campus. . . .

"But it has not all been study. You have worked hard also for many student causes—for many things that have been good for M.I.T. You have worked with us on the final stages of the planning for the Student Center, you have done much to improve the quality of our student publications, you have shown intelligent appreciation for good teaching, and a healthy interest in matters of curriculum. You have planned and carried out worth-while conferences and pro-



**Benjamin M. Zuckerman, '63**, is 19 years old. He earned S.B. in physics, S.M. in aeronautics and astronautics, and also sampled other courses.



**Robert E. Efimba, '63**, sent to M.I.T. by West Cameroun, Africa, government, earned his S.B. in three years. He has a brother studying in Moscow.



**Oscar Orringer, '63**, received S.B., S.M., and degree of Engineer in aeronautics and astronautics—and also received commission in Regular Army.



grams on subjects of vital concern with speakers of substance and merit. As individuals and as members of our fraternities and dormitories, you have contributed constructively to the community that is M.I.T. From all this and much more has grown my attachment to the Class of 1963 and my respect for its members.

"I am confident that you do indeed understand the meaning of education—the value and the limitations of your experience here.

"At the beginning of your stay with us no doubt it was the tremendous pace and the extent of the curriculum that made the deepest impression—the seemingly infinite demands we made upon your capacity to learn and the seemingly unattainable standards that were set for your achievement. All this was painfully evident to you in recurring rounds of quizzes, exams, papers, and deadlines. Much of the factual detail which has consumed your time and energy these past few years may prove to be of only transitory importance. But in the process of mastering these day-by-day assignments, you have acquired the self-confidence and inner strength that comes only from doing a real piece of work, from marshaling your physical and intellectual forces, from meeting the tests of accuracy, thoroughness, and timing.

"Now you have run the course and hurdled all the obstacles along the way. And as you look back and view your undergraduate years with the perspective of an Alumnus, I think you will discern more clearly

the larger plan. There can be no education without substance; yet we have endeavored to give you something more—the opportunity to mature in an environment dominated by intellectual concerns, in association with fine minds. These are the ideas, molded into a philosophy, that have become familiar to you and that you will carry with you as you go forward.

"As you move along, looking to the future in the light of your own hopes and ambitions and to the immediate past in reviewing what you have done and what you have learned, you will see yourself as well in a new perspective. For today you, too, have become a part of our history. Your presence has replenished our vitality and reinforced our purpose. It is for you that we have been here. And in your turn, your accomplishments have now been joined to those of the Faculty, the Alumni, the Corporation, and the friends of M.I.T. who over a span of a hundred years have brought to this institution its resources and its strength. . . ."

President William L. Taggart, Jr., '27, of the Alumni Association, carried the mace as chief marshal of the academic procession, and Chairman James R. Killian, Jr., '26, of the Corporation, presided while it was in place. The Reverend Robert C. Holtzapple, Jr., an M.I.T. religious counselor, gave the invocation, and John D. Corley, Jr., conducted the brass choir in musical numbers.

The guests of honor included about 40 members of the Class of 1913, led by R. Charles Thompson;

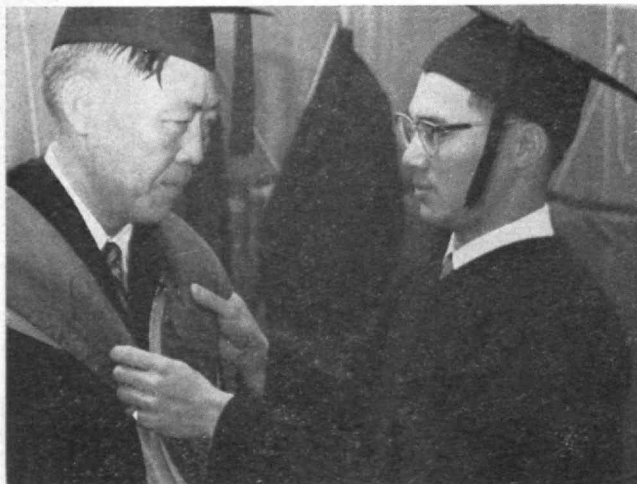
Vannevar Bush, '16, Honorary Chairman of the Corporation; the Honorable Robert H. Winters, '33, President-elect of the Alumni Association; and five members of the Faculty who are retiring this year. They are Professor Murray F. Gardner, '24, Associate Professors Marcy Eager, Ernest N. Gelotte, '23, and Louis Harris, '20, and Associate Dean Thomas P. Pitré.

Secretary John J. Wilson, '29, of the Corporation, led many of its members, and Professor Herbert H. Woodson, '51, led more than 200 members of the Faculty to seats of honor. Investors of the Hood were Dean Harold L. Hazen, '24, of the Graduate School, and Professor Harold S. Mickley, '46.

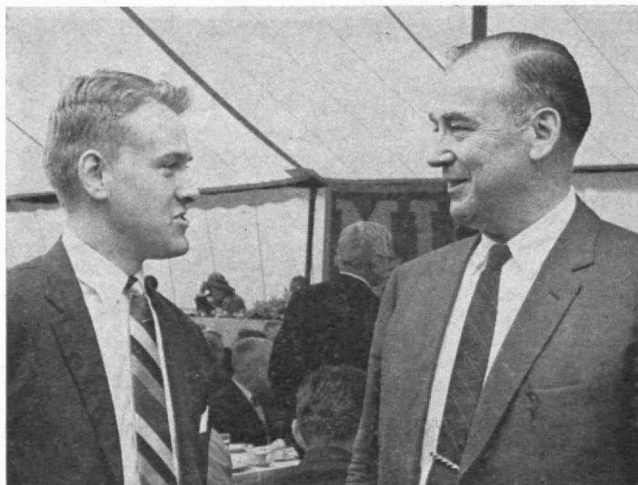
Officers of the Class of 1963 who led the graduates were Henry W. Bowman, President; Robert E. Vernon, Vice-president; Stephen P. Kaufman, Treasurer; and L. Robert Johnson, Secretary. The Faculty Marshal of the Graduates was Professor Campbell L. Searle, '51.

Speakers at the luncheon after the ceremony were Drs. Stratton and Killian, Mr. Bowman, and Eugene L. MacDonald, '13.

Mr. Bowman called the Institute "a vast energy sink," from which you get back whatever you put in, and entertained his listeners with statistical projections. Mr. MacDonald wittily recalled his experiences both on small jobs and such big ones as the Seventh Avenue Subway and the Hellgate Bridge, and assured the new graduates that they would be greatly amazed when they returned for a 50th-year reunion.



Professor Lan J. Chu, '35, with his son, Yuan Hou Chu, '63, at commencement. Another son, Yuan Bo Chu, is an M.I.T. junior. Yuan Hou Chu will continue studies at Purdue.



Alfred W. French, 3d, '63, with his father, Alfred W. French, Jr., '26, at luncheon. Alfred W. French, '89, taught at the Institute and founded an Ohio manufacturing firm.

# The 1963 Commencement Address

*A new task for science is to help elevate the standards of living throughout the free world*

BY EUGENE R. BLACK

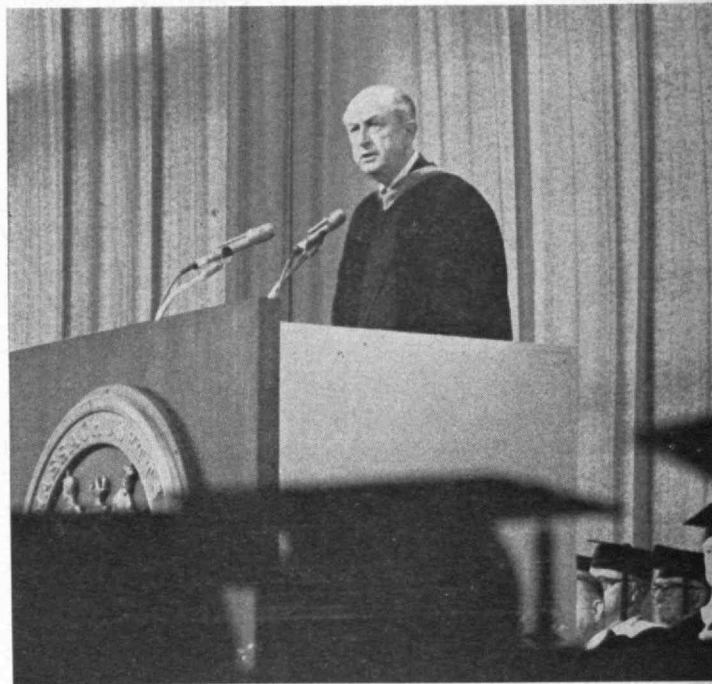
I MUST CONFESS that I face you today with a sense of looking far, far into an unknowable future. The lifetime of my generation has been a span of some achievement—from Marconi to microwaves, from Kitty Hawk to Cape Canaveral. But the growth and application of scientific knowledge is accelerating at a pace that will soon put even the recent past to shame. I am told that the number of scientists in the world today is very nearly equal to the number of all the scientists who ever lived before.

The continuing enlargement of science promises to be one of the most powerful forces shaping our society, as it has been in the past. Darwin, who showed that man was even further below the angels than the theologians had thought, was only following in the footsteps of Copernicus, who had removed man from the center of the universe and had reduced him to orbiting around the sun. Ever since scientific discovery began, it has more and more deeply affected religion, philosophy, and the physical capabilities of man. As Whitehead put it, while scientists might be powerless as individuals, they were "ultimately the rulers of the world."

The kind of world you yourselves will now go out and create is beyond my imaginings and beyond those, I dare say, of most of my contemporaries. What seems quite sure, however, is that your generation in science and engineering is going to play a different role from those that have gone before. The scientist of the future is going to be more and more conscious of the implications which his work will have for society. He is going to be more and more concerned to exert at least a broad influence on how his work is oriented and what ends it seeks.

The detonation of the atom bomb at Hiroshima greatly encouraged the scientific community's normal habits of introspection and self-questioning. Some of the questions were familiar: Was science, for example, at war with faith, and was it undermining the moral values by which our civilization lives? Were the discoveries of science, inside the atom and elsewhere, so far beyond the common understanding that scientists and the rest of humanity no longer would be able to talk with each other? Or, to put the question more concretely, would science become so complex that it would be beyond the power of normal government to use it wisely?

Some of the questions which scientists asked after World War II have been resolved, and some doubtless never will be. But one greatly encouraging result of debate is the growing desire of everyone to bring science once more into the public domain. It seems clear that the sciences, beginning with mathematics, will receive a more vital place in public schooling; the growing desire



*EUGENE R. BLACK, as President for 13 years of the International Bank for Reconstruction and Development, and now as a special consultant to the Secretary General of the United Nations, has gained renown as an effective architect of a better world. He is a director of numerous companies, a trustee of the Ford and other foundations, and has received many honorary degrees.*

to bring the sciences back into our general culture seems certain in time to be satisfied. And if the wedding of science and public policy is not yet complete, at least the nuptials are being vigorously prepared: we have never had so much study of the relationships between laboratory and government, nor have scientists themselves ever occupied so many positions, official and otherwise, from which they can shed the light of knowledge on public affairs.

The question of the relation between government and science is becoming more and more urgent. More than two-thirds of research and development is now financed from Washington, and it goes without saying that a very large part of this effort is oriented to military and security purposes. The effort is competing more and more seriously with pure research, on which all technological advance is fundamentally dependent, and with development that would make a more direct and immediate contribution to our social and economic growth. As Dr. Killian has pointed out, satisfying the claims of defense

may leave us behind other nations in civilian research and development. We may become a second-class power in the arts of peace.

SCIENTISTS are keenly aware of this predicament into which the cold war has thrust them. They are not so conscious, I think, of their involvement in a second struggle which in the long run may be even more fateful for history. That is the struggle to elevate some four-fifths of the people in the non-Communist world—the so-called underdeveloped nations—to a more tolerable standard of living. To take a more active part in that struggle, I suggest, is a new and essential task for science to undertake today.

The contrast between the conditions of life in the developed and in the underdeveloped countries is an even more pervasive feature of the world landscape than the cold war. The British scientist, Blackett, has invented a telling phrase to describe this state of affairs, based on figures of income per head: he divides the world into thousand-dollar and hundred-dollar countries. Take, for example, the contrast between the United States and India, which has a population nearly as great as the United States and western Europe combined. Here in our country, per capita income is about seven dollars a day; in India, it is under 20 cents. Our individual intake of food is about 3,300 calories a day; in India it is under 1,900—considerably less than is necessary to fuel what we would consider a moderate day's work. We have one scientist or engineer per 200 of population; India has one in each 30,000. All the electric power in India would only just be enough to supply the area of Chicago.

What holds for India holds equally for most of the rest of Asia—where even poorer countries exist—and for Africa. Even in Latin America, output and income per head are only one-seventh of what they are in the United States. And the somber truth is that the gap between the thousand-dollar and the hundred-dollar countries does not seem to be closing. In fact, it probably is growing wider.

Western science and technology are deeply involved in this dilemma. They have stirred the admiration and aspirations of the underdeveloped countries, and have made the width of the gap in living standards intolerable. But so far, they have made no decisive contribu-

tion toward closing the gap. The romantic notion that some people have in their mind's eye, of technology riding like Lochinvar out of the West to rescue the poor nations of the world, is far from being realized. Science can promise important advances in underdeveloped areas; but in the meantime, it has created problems of great severity as well.

Foremost of these is the problem of population growth. The most spectacular achievement of modern medicine is the sharp fall of the death rate in almost every country in the world. The result, as we all know, has been an upward leap in population; and in some of the underdeveloped countries, this increase has reached staggering proportions. In the last decade, the population of Pakistan, for instance, has grown by an amount nearly as great as the number of people in all of Canada.

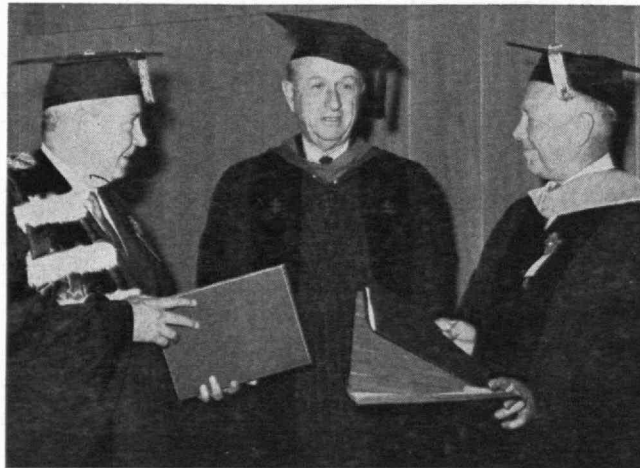
So far, there has been no comparable achievement enabling the poorer nations to increase the output of goods and services faster than population, and so to improve their standard of living. In fact, at least in the short run, technology itself seems to be making it more rather than less difficult for the underdeveloped countries to advance their fortunes.

Historically, for example, the common path to a better living standard has been for countries to finance their economic development by exports, especially of primary commodities, to countries already more developed. But this road is becoming more difficult to travel. Our own technological development has brought about important changes in our appetite for raw materials—synthetics, for instance, are taking the place of many fibers and even of minerals that once moved plentifully in world trade.

Two years ago at Rehovoth in Israel, at the first international meeting of scientists ever called to focus specifically on the problems of the developing countries, a formal declaration was adopted that "the modern scientific movement is constantly increasing the strength and wealth of the advanced countries, while having little corresponding effect in the less developed countries." The fact is that while the truths that science seeks are universal, the practical applications are not necessarily so. What we do in research and development tends to mirror the concerns that arise out of our own surroundings and our own culture. We bend our efforts toward



William L. Taggart, Jr., '27, and Robert H. Winters, '33, Alumni Association Presidents, at commencement exercises.



Chairman Killian, '26, the commencement speaker, and President Stratton, '23, robed for the annual ceremony.



getting to the back of the moon; the underdeveloped countries would be more interested in a cure for trachoma.

Our technology as a whole is an expression of our own society, and is a resultant of many factors: our particular blend of natural resources, our soil and climate, our mass markets, and our intensive use of capital, for instance. Important parts of Western technology are usable anywhere, but there also is much of it which does not import easily into the hundred-dollar countries, with their tropical and sub-tropical climates, their own mix of natural resources, their paucity of capital, and their own deeply ingrained forms of social organization. One simple and familiar example of what I am talking about is the production of energy from atomic fuel. At the war's end, the prospect of atomic power was hailed as a godsend to the underdeveloped countries; but nearly 20 years later, it appears that for some time to come atomic power still will be uneconomic to use in any but developed countries already making the fullest use of conventional sources of energy.

**W**E CANNOT close the technical gap which separates us from the underdeveloped countries simply by exporting our own technology. Nor, obviously, can we do it simply by exporting engineers to build dams, design factories, or carry out other specific projects—useful though that is. What the community of science and engineering must do, I think, is to make a much greater and more conscious effort to promote the spread of its own outlook and its own skills into the underdeveloped world. That is the best way to enable the hundred-dollar countries to develop their own supply of experts. That is the best way to establish the growing points in the underdeveloped nations from which the ideas of science can proliferate and find practical application.

A beginning has been made. The Rehovoth conference of 1961 on science and the new nations, and the recent United Nations Conference on Science and Technology, have served to focus attention specifically on problems of development.

Suffice it for me to say that three general lines of approach seem to be particularly promising. One, of course, is to put the proper emphasis on education in science. It should begin early and should have as a foremost objective a general understanding of the methods and nature of science, so as to provide ground which will breed scientists and encourage public support for their efforts. When it comes to higher training and especially to technological institutes, I join others in urging that some of these be organized on a regional basis—not merely as a means of economy, but as a way of spreading knowledge as widely as possible through areas with similar characteristics and a common language. Let me add my opinion that the earth and the organic sciences deserve some priority, since the most pressing problems in the hundred-dollar countries are to take an inventory of physical resources, to grow more and better food, and to improve the quality of human resources.

A second line of approach, I think, must be to extend in every possible way the contact between scientists and engineers of the developed and of the underdeveloped countries—through wider circulation of journals, through personal channels, through joint and continuing projects of research and development. It would be of

particular benefit, I should think, to carry out as many of these projects as possible overseas, to give scientists from the developed world the fullest chance to observe the problems of new nations and to experience what it is like to work in those countries with the materials at hand.

Organized science seems to me to have a particular opportunity. More than a dozen international scientific societies exist; it would be of the greatest value for them to extend their membership as far as possible into the developing countries, many of which are underrepresented now. For another thing, why not take more of the section and plenary meetings of these societies to cities outside western Europe and North America? They would be memorable events in the less developed countries and could easily become an important factor in a chain of growth linking the scientific movements in the thousand-dollar and the hundred-dollar countries.

Let me suggest, as a third line of approach, that the societies undertake still broader responsibilities. As we all know, one of the most brilliant successes in international co-operation since the war was one organized by scientists—the International Geophysical Year, a project of the International Conference of Scientific Unions. It seems clear enough that the scientific community is the best possible source of inspiration and of planning for a rational and energetic attack on the technical gap separating the developed and the underdeveloped worlds. The societies would be performing a deed of great merit if they could function as boards of strategy, finding a higher place on their agenda for considering how each in its field can help strengthen the scientific movement abroad, for planning the concrete contributions scientists from the industrial nations can make along the whole front of scientific and technical advance in the underdeveloped world.

**T**HE REASON I wanted quickly to express these thoughts to you young men and women today is twofold. In the first place, the problems of the new nations seem certain to go on attracting your attention, just as they attract the attention of everyone else who reads the newspapers. But in the second place, I hope that the effort to solve some of these problems will attract the participation of many of you.

Your participation, I think, need not be considered abstract generosity. The existence of hundreds of millions of destitute human beings in the world is a source of international friction and a threat to peace. We see every day how it may add new peril points to already hostile contacts between the great powers of Europe, Asia, and our own hemisphere. We see every day how it magnifies the chances of disagreement and disaster.

The threat is always present that the tightening of tensions may more and more restrict our own liberties. We already know the pressure that the world situation is exerting on our free choice of lines of scientific inquiry and of practical development.

There is no simple solvent for world tension. But certainly an important part of any attempt to keep and to widen the peace has got to be a determined effort to narrow the distance that lies between ourselves and the hundred-dollar countries. If scientists and engineers were to take a strong lead in this effort, they would serve values on which their own vocations depend and, in serving science, would do great service to mankind.

# A New Helmet For the Campus

A NEW six-foot bronze figure produced for M.I.T. by Dimitri Hadzi of Rome—thanks to a gift from Mr. and Mrs. Samuel A. Marx, '07, of Chicago—was unveiled this spring in the court between Building 2 and the Hayden Gallery. Mr. Hadzi's title for this and several of his other sculptures is "Elmo," which means "helmet" in Italian.

Born in New York of Greek parentage, Mr. Hadzi's interest in art matured while he was serving in the Air Force. He studied at the Cooper Union, went to Greece as a Fulbright Fellow, and settled in Rome in 1951. He received the Tiffany Award for sculpture in 1955, and the American Academy of Arts and Letters Award in 1962. His commissioned works have included sculpture for the Philharmonic Hall of the Lincoln Center for Performing Arts in New York.

The artist came to Cambridge for the unveiling of this "Elmo" and the opening of a retrospective exhibit of his work in the Hayden Gallery.



The sculpture was cast in parts after Mr. Hadzi had made a plastic model. He is seen above checking parts before they were welded together, and at the right with Mrs. Julius A. Stratton after the unveiling ceremony.



The new sculpture outside the Hayden Gallery as seen against Boston's sky line.





# The 1963 Baccalaureate Sermon

BY JOHN E. BURCHARD, '23

*Dean of the School of Humanities and Social Science*

THE baccalaureate "sermon" is strictly American, descending from the day when our colleges were firmly encased in theology. What to say in a baccalaureate sermon would not have troubled my ancestor, Ely Burchard, when he was studying in Yale at the end of the Eighteenth Century. In his unpluralistic society he could rely, for example, on *The Body of Divinity*, prepared by Edward Leigh, a Master of Arts of Magdalen-Hall in Oxford and published in 1662 at the Signe of the Turks-head in Fleet Street over against Fetter Lane. This thick volume, which I still possess, claims on its title page to "open the fundamentals and main grounds of religion, refute the contrary errors, discuss and handle most of the Controversies between Us and the Papists, Arminians and Socinians, explain and vindicate several scriptures from corrupt Glosses," and perhaps more. Perhaps my ancestor Ely could hold young men for hours in discussion of such points. It is certain that I cannot; were I to try, you would properly leave to join the many of your classmates who, having prejudged what a baccalaureate sermon is likely to be, have chosen not to endure this encounter.

A baccalaureate sermon deprived of theology is likely to become a collection of ethical observations or injunctions, usually presented by an old man to young ones; something that has rarely been in favor since Shakespeare created the sententious Polonius and depicted him as a bore who did not even practice what he preached. Any other aging mouther of homilies runs the risk of being a Polonius. Yet duty now requires me to run this risk. Let me for a protective moment turn the spotlight on you.

If I do not know exactly what a sermon is, you do not quite know what a *baccalaureate* means or what a *bachelor* is. Let me tell you that neither word carries more than faint connotations of praise.

Scholars seem still to disagree as to the roots and hence perhaps as to the original meanings of *baccalaureate*. The cocksure Dr. Samuel Johnson rejected the interesting idea that it came from a Greek word signifying "foolish," and argued for the Latin *bacca laurus*, that is, laurel berry, adding for good measure, and I quote, that "bachelors, being young, are of good hopes,

*In each of us there has to be at least a little of Hamlet—and that is better than to be Polonius*

like laurels in the berry." It is a pleasant conceit and has intimations of praise which may be why it has been preserved by Webster though in a suitably vague way. But the harder-nosed scholars of the Great Oxford Dictionary reject this source as imaginary. Instead, they turn back to *baccalarius*, a latinization of an old Eighth-Century word for a rustic who worked on a division of land. Shorn as this is of any connotations of the laurel, it may seem depressing. The early uses may be a little less so. A bachelor was a young knight, not old enough or having too few vassals to display his own banner, who therefore followed the banner of another—in short, a novice in arms. Later on, when chivalry was on the decline, a bachelor was a junior or inferior member of a trade guild or company. Either seems to me to describe your situation rather neatly as you stand on the eve of being awarded our lowest academic degree. So you see we both have a problem with the baccalaureate sermon.

WHAT I want to worry you about is how you will conduct yourselves in the next stage of your apprenticeship and even what your masters will decide to encourage and discourage. Of most American college students it is almost safe to predict that they will make a lazy choice to stop educating themselves soon after graduation.

Since you have met our requirements at least fairly well, generally doing what was expected and sometimes somewhat more, I suppose it is not to be feared that beginning on Friday you will begin to be totally lazy. You will perhaps continue to read the appropriate technical journals. But you may still be lazy if you are content merely to be skillful in your own specialized techniques, to contribute to the world only in your safe specialized way, or even to become so bemused by your admittedly brilliant technical achievements that you admire them for themselves alone, thus worshipping means above ends. You can thus try to wash your hands of the corruptions of your fine achievements, blaming them on others. It will not go down. Scientists and engineers are not, of course, alone to blame for the harm or vulgarity or triviality that sometimes emerges when their knowledge is applied in wrong or silly causes, but when they leave use decisions to others they are not blameless either. This applies equally to major questions such as those of disarmament or testing, to important questions such as the nature of the messages on television or the congestion of vehicular traffic, to the ugliness of our littered highway culture and to a host of other problems at all levels of major and minor civic importance. It is easy to treat these problems as ab-

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DEAN BURCHARD was trained as an architect and engineer and early in his career became a national authority on housing and home architecture. An M.I.T. Faculty member since 1938, he has been a leader in educational and cultural matters and has written extensively for both foreign and domestic periodicals on library planning, architecture, education, and culture.



stractions. This may be particularly tempting to you who have begun to learn to do something that is concrete and special, that is much in demand and deemed to be useful, and that it will satisfy you to do. So it is tempting to dive into this clear private lake of yours and stay there, leaving the wading in the mucky marshes to some one else. It is a temptation every kind of specialist encounters, even an artist. But the decisions as to the use of the work of specialists is unhappily too important to leave to generalists, or for that matter to any one group of specialists.

Now it is not easy to leave the haven of specialized competence and to try to join in the management of human affairs. You will be advised by your organization not to stick your neck out. You will be discouraged by some of your superiors because it may delay your specialized growth. You will be discouraged by others of your superiors because on the whole no opinions should be voiced which might hurt the corporate or institutional image, which in practice means almost any opinions. When you try to join in the management of human affairs, you will perhaps find it uncertain, messy, even dirty, and you can be hurt. So it will be easy to leave it to some one else. It will be easy to declaim against the times without lifting a hand to change them; it will be easy to console yourself with the idea that you don't know enough, or that you are working hard enough already, or that you can't see any way to be effective. It will be easy to give money but not time, and they are not equivalents. What may have started in you as an eager desire to battle may deteriorate into angry side-line criticism, then to cautiously worded letters to an editor, then to a kind of spectator sport, the dispassionate viewing of the parade of events with comments by an army of people from Mel Allen to Dave Brinkley. Finally you may descend to cynicism and to making fun of the League of Women Voters and in the end to apathy. No reason justifies the descent to apathy.

Of course ours is a rough world. It always has been so. Macaulay's *History of England* contains many errors but its writer was not in error when he said, "Those who compare the age on which their lot has fallen with a golden age which exists only in imagination, may talk of degeneracy and decay; but no man who is correctly informed as to the past will be disposed to take a morose or desponding view of the present." That, of course, does not mean that the present is just fine.

A great many human beings are engaged in a good deal of nastiness today, many individually but many more collectively. This has always been so although in other times it may have been easier to be secret about it. But if you examine history carefully, you cannot really like the record of what has been named "the so-called human race." Despite the roster of magnificent heroes, great artists, dedicated and sometimes brilliant scholars, and occasionally a great saint, the words of Alexander Pope still ring true:

Plac'd on this isthmus of a middle state,  
A Being darkly wise, and rudely great:  
With too much knowledge for the Sceptic side,  
With too much weakness for the Stoic's pride,  
He hangs between; . . .  
In doubt his Mind or Body to prefer;  
Born but to die, and reas'ning but to err;  
. . .

Created half to rise, and half to fall;  
Great lord of all things, yet a prey to all;  
Sole judge of Truth, in endless Error hurl'd:  
The glory, jest, and riddle of the world!

Pope published this 230 years ago. Before that, and with monotonous regularity since, one can recall religious massacres, conquests of India by Moguls and Britons, of China by Manchus and Portuguese, of Russians by Poles and Poles by Russians, one can list usurpers of all kinds, bad regents, bad popes, bad kings, even Divine-Right-proclaiming ones like James I, all conducting kingdoms in which extravagance, corruption, traffic in titles, and multiplication of monopolies were commonplace. One can tell of great plagues and great fires and great deportations and great enslavements and great tortures; and of all these superior examples can be found in our century and even in our decade. There have been so many revolutions that every country speaks of its own as The Revolution, while the British number theirs. A hundred years ago you might not have been standing here but instead lying at Chancellorsville or preparing for death at Gettysburg. Fifty years ago you would have had five years to wait for the battles of Belleau Wood, Château-Thierry, and the Argonne, after which neither America nor the world would ever be the same again.

With all our advances on the technological side, not much has happened or been achieved by men to require any major revision of Pope's conclusions—"Sole judge of Truth, in endless Error hurl'd: The glory, jest, and riddle of the world." It is not paradoxical to say that this is not necessarily a pessimistic conclusion.

THROUGH all this dreary history, and today too, the same principal themes have been involved. There has been the question of religious freedom, of economic or political domination; of racial prejudice, segregation, and persecution; of how riches should be distributed. Often there was the problem of enlarging population. Under these lay the question of moral behavior. Whatever the books said, was any one really his brother's keeper, especially when the chips were down? None of these questions has been resolved. None of our great perplexities is really new. The nuclear bomb is new and this multiplies the number of people who may be directly affected by a war, multiplies it greatly, as well as multiplying the possible genetic consequences for subsequent generations, and so on. So our problems may seem more spectacular to us, even more cosmic, than those of another day. But a young man living in the middle of Rhode Island's Great Swamp Fight, or a young woman and her child suffocating in the Black Hole of Calcutta, or a young African driven before the lash of an Arab slave trader, or a young Muscovite watching his house go up in flames set alight by the torches of Napoleon, or a young Jew on his way to Belsen—none of these would have any occasion to look upon our times as more frightening or in any important sense as different.

How are they really different, if at all? The scale is certainly greater. More people are involved. In most of the disasters I have been talking about through history it was possible for many young men, even whole families, to go about their business avoiding the Huguenot

massacres, avoiding Cromwell, avoiding the American Revolution, avoiding the Civil War. They could not avoid all the consequences of the events, for history is a seamless web, but they might often miss the personal impact of human brutality. This is hardly possible any longer although sometimes the consequences will be postponed. But more important still is the fact that more of us know of the tides of events now; and we know about them much more quickly. Of course we can still avoid knowing about them in any useful way. But we can hardly avoid hearing about them. And that was not always so.

The fact that we do hear about them and if we choose can know something about them, perhaps even do something about them, raises some difficult questions for us all. Would we rather not hear about them, and particularly would we rather try to forget about them? There is a way to do this, the way of idleness, the way of sitting every night in front of the television set or its equivalent. Neither Perry Mason nor Marshal Dillon will ask you to think much about segregation or overpopulation or genocide. This is the first decision each of us has to make for himself; shall I close my eyes, my ears, and my mouth like the three monkeys? Then if disaster comes I will at least have been spared the necessity of worrying about it ahead of time. This is the solution chosen by a good many people in the world; I hope it will not be yours. Ignorance can become a habit and it is on the whole easier to achieve than knowledge.

Now we can be sure you are not broadly ignorant of these questions and suspect that you may read and worry about them now and again. But how? *TIME* Magazine is hardly enough. How many different sides of any matter do you really look into? Do you ever read anything not approved by your group? You will find it harder to do in the outside world. It is not much better to leave your opinion forming to *TIME* alone than to leave it to *PRAVDA*. Neither will be consistent; neither will contain the whole truth, even if the reasons are quite different. We may prefer *TIME*'s control to that of *PRAVDA* without being willing to trust either completely—or any other one source.

I do not want to have you think that I do not know, as a musical comedy song had it, that flings are wonderful things; or as the song went on that they have to be flung when you're young. Have your flings, lie sometimes in the sand doing nothing, don't give up your graceless dances. These and other diversions are a way of lying fallow, and some such way is needed by each of us. For such purposes chess or an orchestra concert are not superior to mountain climbing or bowling. One's recreational time need not be devoted to intellectual pursuits. How you use the mind when it is fallow may not be very important.

What is important, of course, is that you do not accustom the mind to be fallow all of the time. That your elders often do no more, need not cause you to ape their example. You do not need to be numbered among Eliot's hollow men, "... stuffed men Leaning together Headpiece filled with straw."

You may well ask whether ardor can bring you anything but pain since you know of injustice or impending doom and do not find a way to do anything about it. Again, you may wish to say with Eliot's J. Alfred Prufrock, "No! I am not Prince Hamlet, nor was meant

to be . . ." But the world is moved by its Hamlets and none of us can escape the responsibility. In each of us there has to be at least a little of Hamlet; and it is better, if not more pleasant, to be Hamlet than to be Polonius.

**T**HERE are many things you ought to be interested in and have valid opinions about, and I need scarcely rehearse what they are. Being interested is hard enough, knowing is harder. But knowing is only the beginning. It is necessary but not sufficient.

In other words, the problem of participation cannot be ducked. Like codes of ethics, the words of the Declaration of Independence mean nothing unless the preachments are practiced. In the early days, at least those who wrote the Declaration did so practice that Thomas Jefferson could write less than two weeks before his death, when illness prevented his journeying to Washington to celebrate its 50th anniversary, "I should, indeed, with peculiar delight, have met and exchanged there congratulations personally with the small band, the remnant of that host of worthies, who joined with us on that day, in the bold and doubtful election we were to make for our country, between submission or the sword; and to have enjoyed with them the consolatory fact, that our fellow citizens, after half a century of experience and prosperity, continue to approve the choice we made." (Letter to Roger C. Weightman, Monticello, June 24, 1826.)

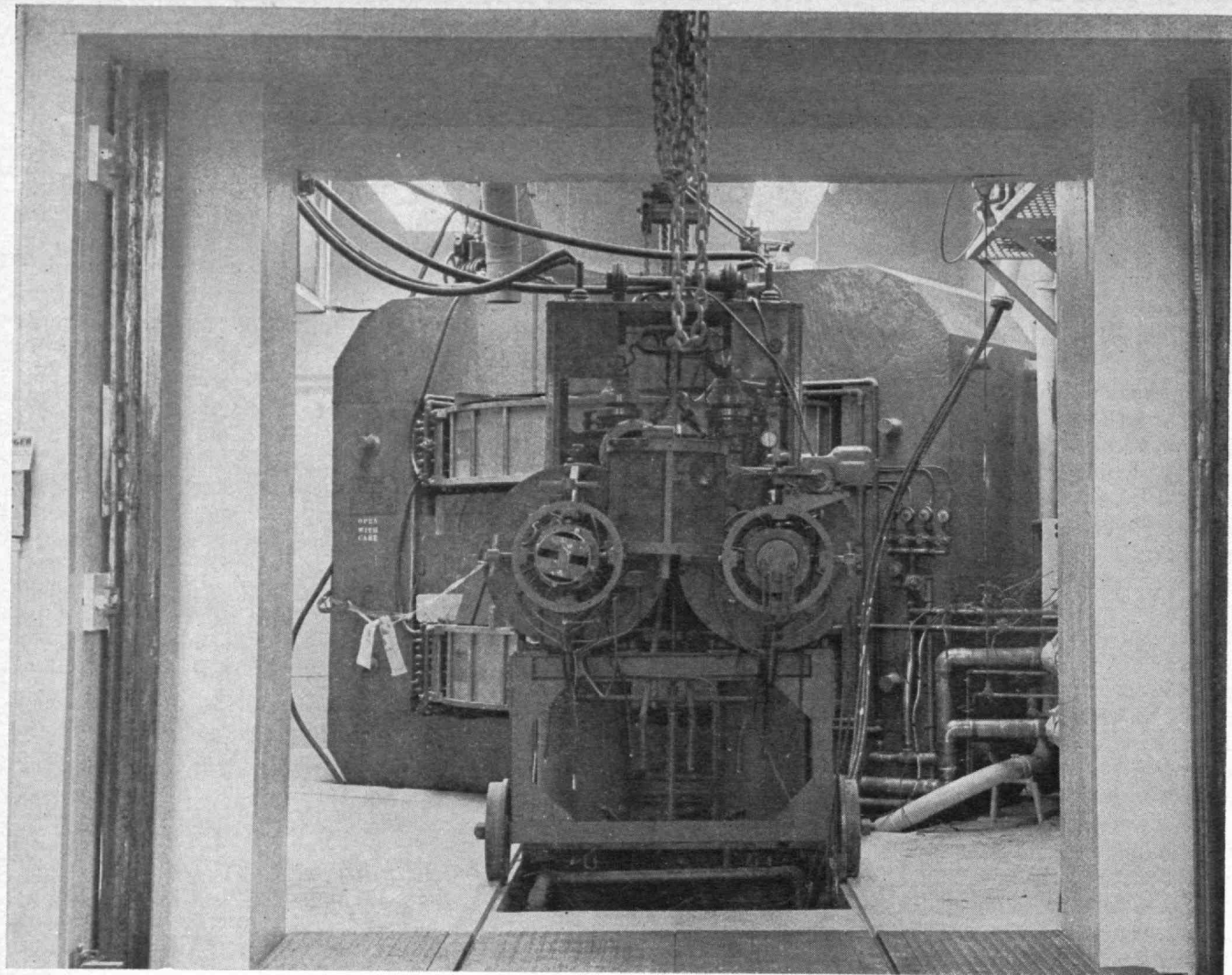
Three years before, Jefferson had written to a Greek doctor, Monsieur A. Coray, "And true it is that the people, especially when moderately instructed, are the only safe, because the only honest, depositories of the public rights, and should therefore be introduced into the administration of them in every function to which they are sufficient; they will err sometimes and accidentally, but never designedly. . . ." (Letter to Coray, Monticello, Oct. 31, 1823.)

You are these people, and it is only you who can see to it that the standards of the public servants are above the morals of the market place. It is the most important obligation you have. It means you have to study the background and make up your own minds on such things as freedom buses, and tractor trades, and the future of the Prudential Center, and a whole lot of other things that it is easier to leave in the hands of somebody else while you go to the baseball game. But it means more than study; it means action. It means you must be persistently vigilant against both the politically corrupt and the politically overambitious, including yourself. Your education has posed a challenge which you cannot ignore. It invites you to work harder in the next 10 years than you have in the last 10, to set the habits that will be yours for the rest of your lives as William James noted long ago. You can choose the easy way of apathy. You can choose the hard way of more education, formal or not. In yet another letter, written late in life, Jefferson laid down a decalog of canons for observation in practical life. The seventh canon reads: "Nothing is troublesome that we do willingly." (Letter to Thomas Jefferson Smith, Monticello, Feb. 21, 1825.)

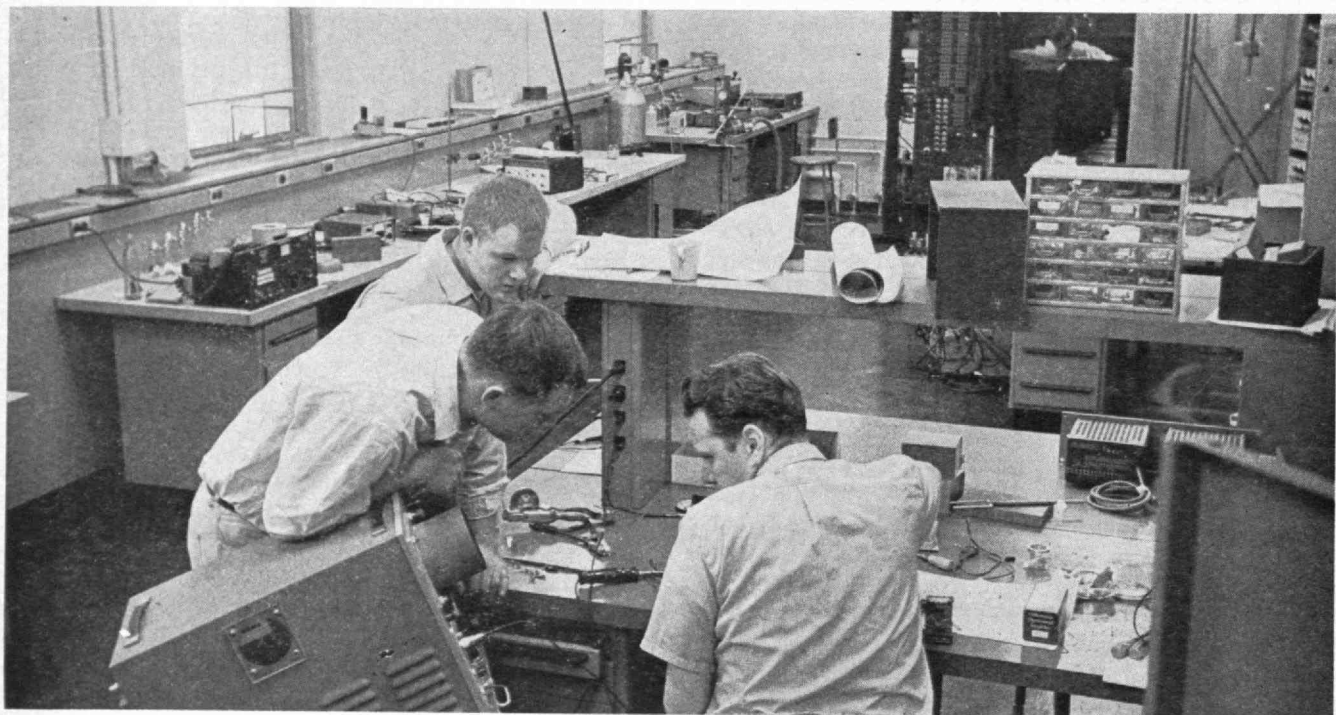
Now suppose that you are willing. Let us look at a small example. Suppose you agree with Mr. Minow that "the average daily output of TV . . . constitutes

(Continued on page 46)





The Markle cyclotron has not moved, but everything around its vault is bigger and better now than it ever was before.



In one of the new laboratories are (from left) Philip Roos, G, Robert Ginaven, G, and Paul Allen, laboratory technician. Additional space and facilities will make the cyclotron increasingly useful in measuring various nuclear phenomena.



# An Old-Timer Well Treated

**A** GAIN this summer Earle F. White's able hands will tune up M.I.T.'s Markle cyclotron. Probably the oldest one still going strong, it is certainly the first cyclotron of its age ever re-housed so modernly. Its new home, at 51 Vassar Street, now nearing completion, represents an investment of about half a million dollars, of which M.I.T. has supplied a quarter of a million and the Atomic Energy Commission the rest.

When Professor Robley D. Evans obtained Vannevar Bush's [16] blessing, and took the Owl to New York with President Karl T. Compton 25 years ago, to seek the money to build this machine, both cyclotrons and man-made radioactive materials were very new. The John and Mary Markle Foundation gave the Institute \$30,000 to build such a machine, and M.I.T. proposed to house and operate it in perpetuity.

The first housing for it cost \$26,395. The second was more costly, and the third structure, which now surrounds its vault, is both larger and finer than its predecessors. The target area that formerly was eight-by-eight feet is now 30 by 40 feet; and adjacent to it are larger, up-to-date, radiochemistry and electronics laboratories and offices for the benches, blackboards, and desks of its users.

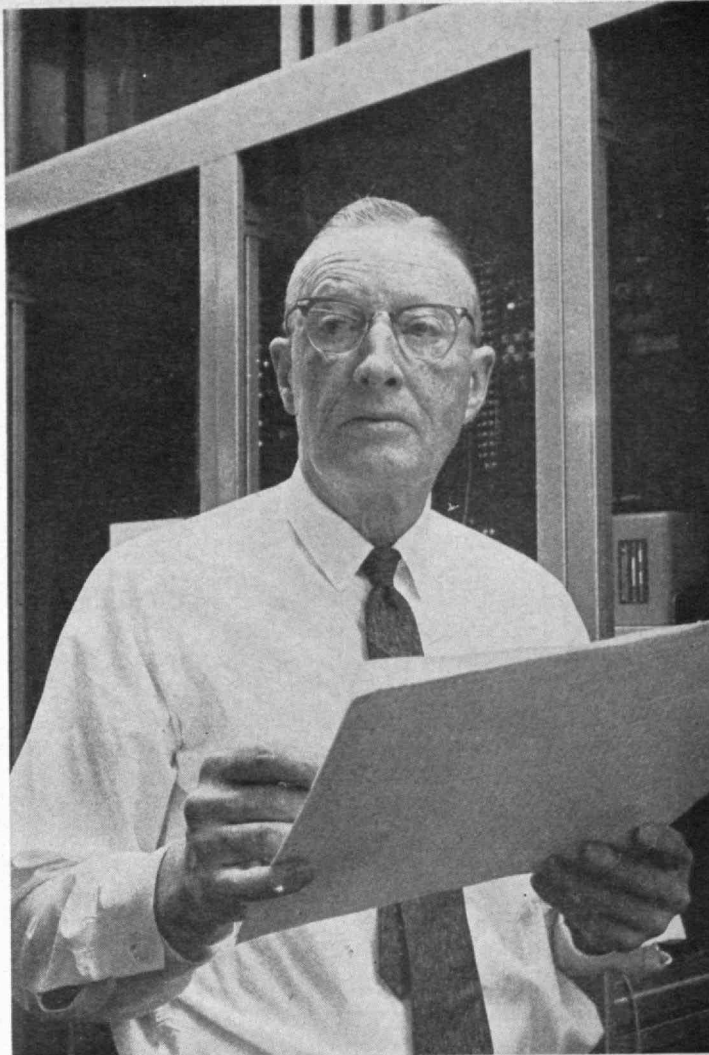
Most noted as a source of radioactive materials for medical uses, the old cyclotron will soon resume producing isotopes that are not obtainable from nuclear reactors for those and other purposes. One of its products, for example, has proven valuable to brain surgeons.

Nathan S. Wall, '54, the physicist in charge, expects the machine to be used more of the time in the future, however, to make fine measurements which can contribute to the further development of detailed theories of nuclear structure. A magnet six feet wide is to be installed to direct its beam into the target area at various angles, and the enlargement of this area will permit better focusing, analyzing, and collimating of the beam. Carefully aligned experimental apparatus can be left in place longer when desired, and better measurements of decay and flight times for nuclei in different states should be possible henceforth. Such work is helpful to those concerned with models of nuclear structures.

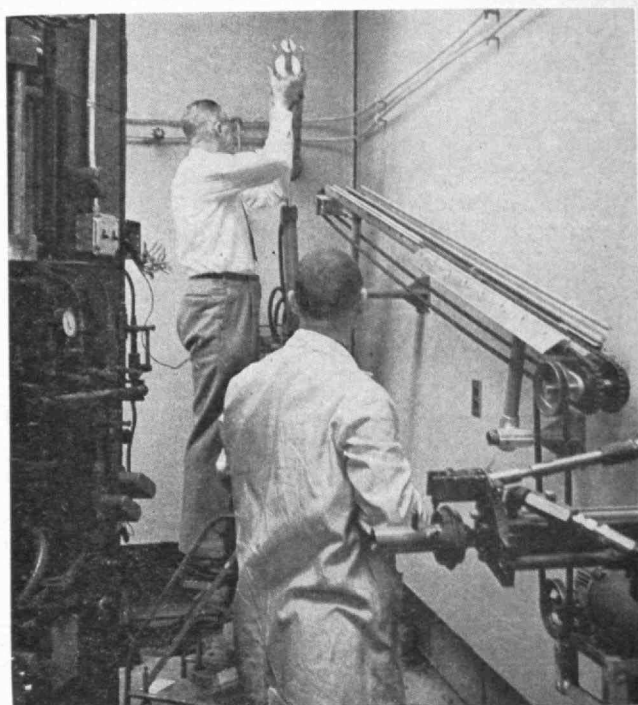
This cyclotron, Dr. Wall observes, has been so thoroughly debugged that it can almost be turned on and off like a faucet, which enhances its value at times as an educational tool. This machine's beam of 7.5-million-volt protons, or 15-million-volt deuterons, or 30-million-volt alpha particles has made many doctoral theses possible, and several years' more work for it already have been planned.

Professor Stanley Livingston, who has gone on to the much, much larger, mightier, and more costly Cambridge Electron Accelerator operated jointly by Harvard and M.I.T., came to the Institute originally to

*(Concluded on page 61)*



Earle F. White helped build old faithful and still runs it.



The new automatic target removal system will speed hot material from the machine to a radiochemistry laboratory.

# M.I.T. Plans Center For Health Research

*Receives grants for new clinic  
and program to help physicians*

**T**HE National Institutes of Health (NIH) has granted \$974,972 to M.I.T. for a 10-bed clinical research center and \$390,000 to support a new postdoctoral program for selected physicians.

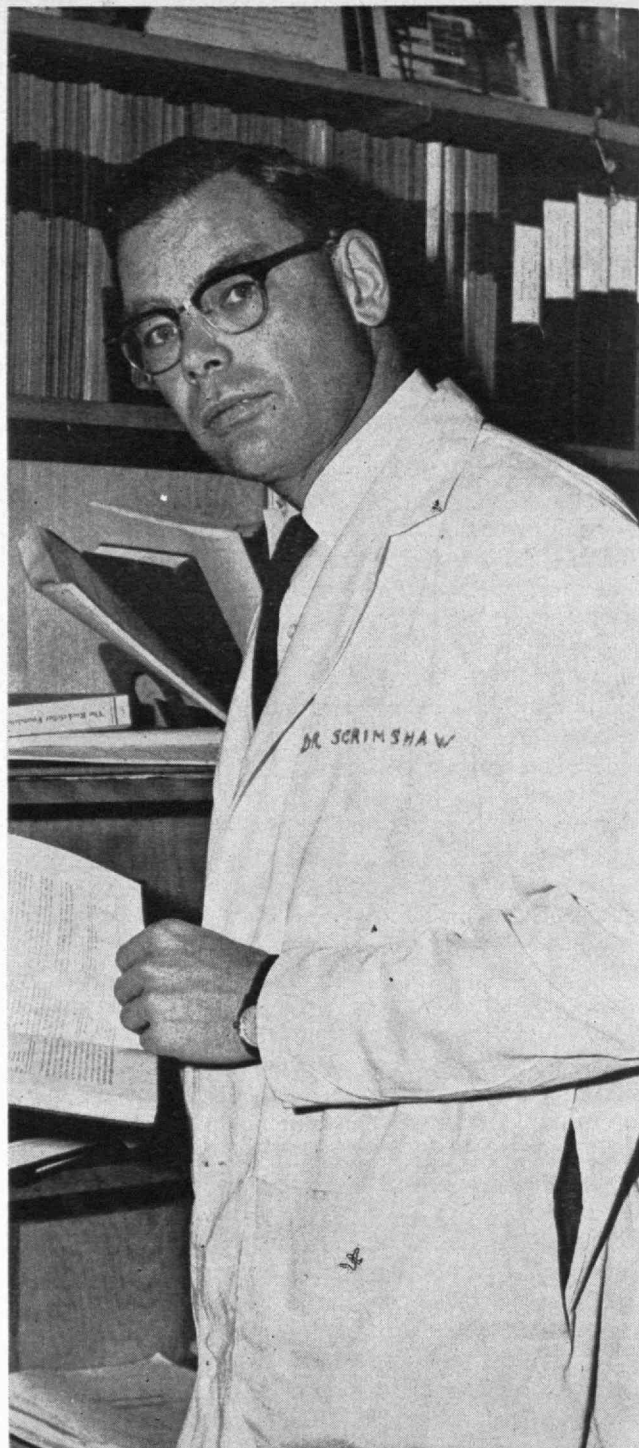
The research center will be a complete hospital with associated laboratories on the fourth floor of the Daggett Building, at the intersection of Main and Ames Streets, adjacent to the campus. It will be used for the care of patients studied in the growing number of research programs at the Institute which are related to human health, and will be available both to the physicians engaged in the new program and to other M.I.T. researchers.

The postdoctoral program for physicians will enable qualified men to acquire doctor of philosophy degrees by learning and applying the skills and methods of basic science and engineering to clinical research. It will be centered in the Department of Nutrition and Food Science, and is being established because of the need for scientists with a firm understanding both of the art and practice of clinical medicine and of the basic sciences and mathematics on which nutritional research is based. It will be the first clinical facility of its kind established by NIH outside of the environment of a full-scale medical center, and is evidence of the growing trend toward coupling basic sciences and engineering to problems in medical research.

Professor Nevin S. Scrimshaw, Head of the Department of Nutrition and Food Science, will be chairman of the supervisory committee, and Dr. Albert O. Seeler, Professor, Director, and Head of the M.I.T. Medical Department, will be vice-chairman. Both are physicians and are listed as co-principal investigators under the NIH grant. Other members of the supervisory committee will be drawn from research groups and academic departments using the hospital. The Program Director for the center will be Dr. Donald M. Watkin, Associate Professor of Clinical Nutrition and a physician who has specialized in internal medicine.

The center in the Daggett Building, which the Institute recently acquired, is expected to be ready for occupancy by next December. It will have three two-bed rooms, four single-bed rooms, a clinical chemistry laboratory, a metabolic analysis laboratory, a special diet kitchen, treatment and examining facilities, and associated support areas.

Part of the grant for the center will be used to remodel, furnish, and equip the 12,000 square feet of space allocated to it, and the balance for its operation through September, 1964. NIH plans to continue to



**Prof. Scrimshaw heads new clinic's supervising committee.**

support its operations for at least six subsequent years through annual grants of about \$325,000.

The grant for the postdoctoral program for physicians is for five years starting immediately, and will provide tuition and stipends for the physicians participating. To be eligible, physicians must have two or more years of postgraduate clinical training. Stipends will depend on individual needs and be set to provide a reasonable standard of living. Normally, it will take four years to fill the course and thesis requirements for the Ph.D. in nutrition. Completion of course work in mathematics, organic and physical and biological chemistry, physics,

*(Concluded on page 59)*



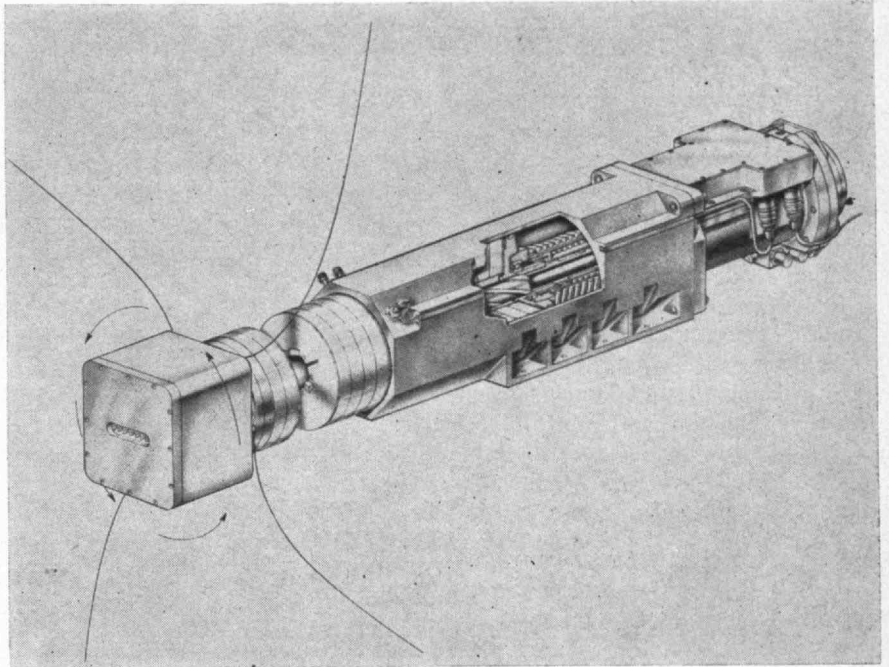
# The Orbiting Dipoles Are Working

*Months of testing and measuring will appraise a thin belt of fibers as a means of solving global communications problems*

A LONG THIN belt of tiny fibers far apart was growing around the earth this spring for tests of a means of solving communication problems. The hairlike fibers are intended to serve as passive reflectors of radio signals for ground stations. Experiments with them that have been planned for several years have begun and will continue for many months.

Called Project West Ford, the work is being done for the Air Force by the M.I.T. Lincoln Laboratory. No other communication method suggested to date, by satellite or otherwise, offers comparable reliability in terms of global coverage with virtually complete invulnerability to destruction or jamming. This work, consequently, may have great significance.

Walter E. Morrow, Jr., '49, and Harold Meyer first suggested the use of an orbital belt of dipoles in 1958. Failure of the dispensing mechanism thwarted an attempt to establish a belt in 1961. Lincoln Laboratory radars located the fibers sent aloft in this second attempt—stretching out in an orbit as expected at an al-



The dispenser sent up by the Air Force to sow the fibers to form a belt.

titude of 2,000 miles—on May 12.

The National Academy of Sciences had notified the international scientific community of what was to be done, prior to the launching, and

the chairman of its Space Science Board, L. V. Berkner, telegraphed his personal congratulations on May 13 to Lincoln Laboratory's Direc-

(Continued on page 42)

THIS IS THE FIRST MESSAGE SENT COAST TO COAST VIA AN ORBITING BELT OF DIPOLES X FROM THE MIT LINCOLN LAB SITE AT CAMP PARKS NEAR SAN FRANCISCO TO THE MIT LINCOLN LAB SITE AT WESTFORD MASS. GREETINGS AND CONGRATULATIONS ON THIS LONG AWAITED EVENT.

THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK 1234567890 CP SENDS  
THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK 1234567890 CP SENDS



# New Books

**THE ARCHITECTURE OF MATTER**, by Stephen Toulmin and June Goodfield (*Harper and Row*, \$7.50), is reviewed here by Professor Robert A. Smith, Director of the Center for Materials Science and Engineering at M.I.T.

THIS UNUSUAL book deals neither simply with history of science nor with philosophy of science, subjects in which both authors are acknowledged authorities, but with a rather curious combination of both. It perhaps may be described as a history of scientific thought concerning the nature of matter. It is not an elementary book and will need careful reading and study if the real depth of the authors' contribution to our understanding of this fascinating subject is fully to be appreciated. Stephen Toulmin and his wife, June Goodfield, are now at the Nuffield Foundation for the History of Ideas, in London, where the former is director. Both have held senior academic posts in history and philosophy of science in England, and Toulmin has been a visiting professor at Columbia and Stanford Universities.

The book is divided into three parts. The first deals mainly with Greek and Medieval thought on the nature of matter and contains much that is stimulating and full of interest. The approach is novel, depending both on comment and quotation. The latter at times tends to interrupt the narrative in a disconcerting manner but gives an air of authenticity to the writers' own views. This part is perhaps a bit long and the reader tends to want to press on to more modern developments. The profound influence of Greek and other early thought on the thinking of succeeding generations for a millennium and a half is not, however, to be taken lightly and its impact on modern ideas is by no means negligible.

Part two deals mainly with modern developments in physics and chemistry including atomic theory and quantum theory. The study of materials in the present century and the vast technological developments resulting from this is touched on but receives less attention than it deserves. Developments in nuclear physics and their impact on the future of man is naturally discussed at some length.

Part three deals with what is commonly known as living matter and with the development of ideas on the cellular structure of such matter. The large and difficult problem of inheritance is discussed at some length. An attempt is made to synthesize the concepts of animate and inanimate matter and this is perhaps the most original contribution which the authors have made. One is left, however, with the strong feeling that the conclusion that there is no essential difference, except in complexity, between the two, is a grand oversimplification and that the real heart of the problem has not been touched.

Those who are prepared to read and think about these problems will be well rewarded by a study of this stimulating book.

**THE MAKERS OF SURVEYING INSTRUMENTS IN AMERICA SINCE 1700**, by Charles E. Smart, '05 (*Regal Art Press*, \$5.95). Mr. Smart is chairman of the board of W. & L. E. Gurley, Troy, N.Y.; and the reviewer, Alexander J. Bone, '24, is associate professor of transportation engineering, M.I.T.

INSPIRED by records of old instruments in the repair and order books of the Gurley Company, Mr. Smart has assembled from this and other sources a fascinating documentation of the bibliographies and products of about 300 men who either made, or were associated in the manufacture of surveying instruments in the United States since 1700. Illustrations of many of the old instruments are included as well as reproductions of old advertising notices describing them. The museums in which many of the instruments may be viewed are also given.

Among the instruments described are compasses made by David Rittenhouse for George Washington and the instruments used by Mason and Dixon in running their famous line. One is struck by the large number of persons concerned with surveying instruments in the Nineteenth Century, the strong influence of European craftsmanship, and the concentration of establishments in the New England region. The origins of many well-known names today are traced in the book, such as Ainsworth, Bausch & Lomb, Berger, Dietzgen, Gurley, Keuffel & Esser, etc.

## Have You Seen These Books?

RECENT publications especially likely to interest Alumni of M.I.T. have included:

*Conflict and Conformity: A Probability Model and Its Application*, by Bernard P. Cohen, Associate Professor of Sociology, Stanford University (M.I.T. Press, \$5).

*The Fundamentals of Food Engineering*, by Stanley E. Charm, '52, Assistant Professor of Food Engineering, the first textbook of its type (Avi Publishing Company, Inc., Westport, Conn., \$25).

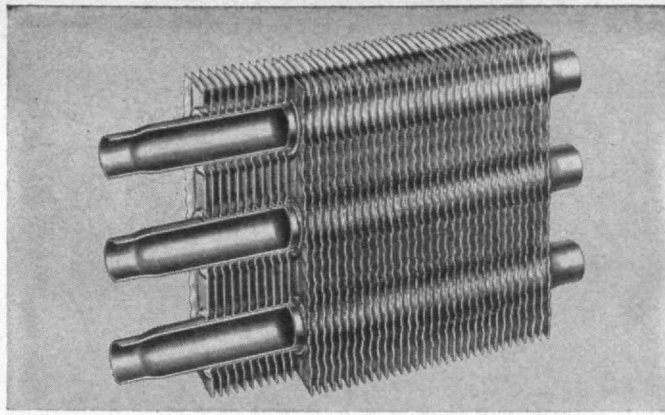
*Introduction to Statistical Inference*, by Harold A. Freeman, '31, Professor of Statistics at M.I.T., a text for a first course in statistical theory assuming a knowledge of calculus (Addison-Wesley Publishing Company, Inc., \$7.75).

*Magnetism and The Chemical Bond*, by John B. Goodenough of the M.I.T. Lincoln Laboratory, a monograph on recent developments (John Wiley & Sons, Inc., \$12.50).

*The Natural Resource Content of United States Foreign Trade 1870-1955*, by Jaroslav Vanek, '57, Assistant Professor of Economics, Harvard University (M.I.T. Press, \$4).

## Coming This Fall

*Education, Manpower and Economic Growth: Strategies of Human Resource Development*, by Frederick Harbison of Princeton and Charles A. Myers of M.I.T. will be published later this year by the McGraw-Hill Book Company. The authors completed the manuscript while Fellows at the Center for Advanced Study in the Behavioral Sciences at Stanford, Calif., this year, and are now editing a companion volume of 10 essays to be entitled *High-Level Manpower for Economic Development: Country Studies*.



B. E. JAMES '32, *President*  
JOHN A. MOGA, JR. '57

## HIGHEST EFFICIENCY...TOP PERFORMANCE



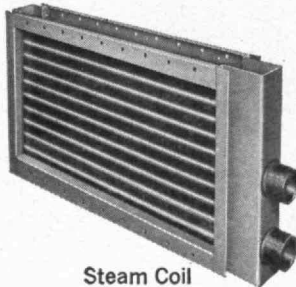
Highest efficiency and top performance are the reasons why more McQuay high-efficiency coils are used to solve unusual heat transfer problems than any other brand. It is not surprising. The famous rippled fin (with full fin collars) and staggered tube construction of McQuay coils provides maximum heat transfer, greater strength, and the longest, trouble-free performance. McQuay high-efficiency coils are available in the widest range of materials including copper, aluminum, stainless steel, steel, admiralty metal, monel, cupro-nickel, and red brass. They are supplied in

one or more rows deep, one to 14 fins per inch, and with  $\frac{5}{16}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{5}{8}$ ", and 1" tube diameters for steam, hot water, chilled water, direct expansion, or special fluids and atmospheres. For the fabrication of coils for special applications, from research through engineering to precise, quality-controlled production, McQuay has more coil experience than anyone in the industry. For the benefit of that experience, see your McQuay representative, or write McQuay, Inc., 1600 Broadway N.E., Minneapolis 13, Minnesota, for additional information.

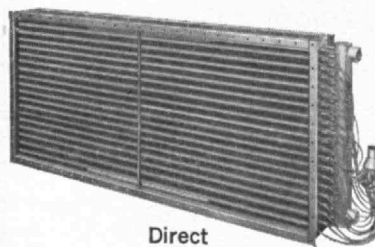
## FOR EVERY HEATING AND COOLING APPLICATION



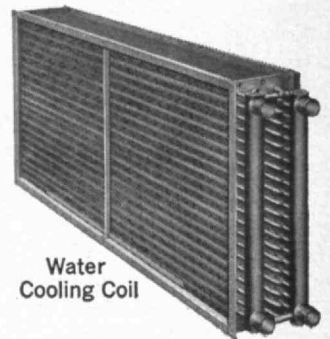
Water  
Heating Coil



Steam Coil



Direct  
Expansion Coil



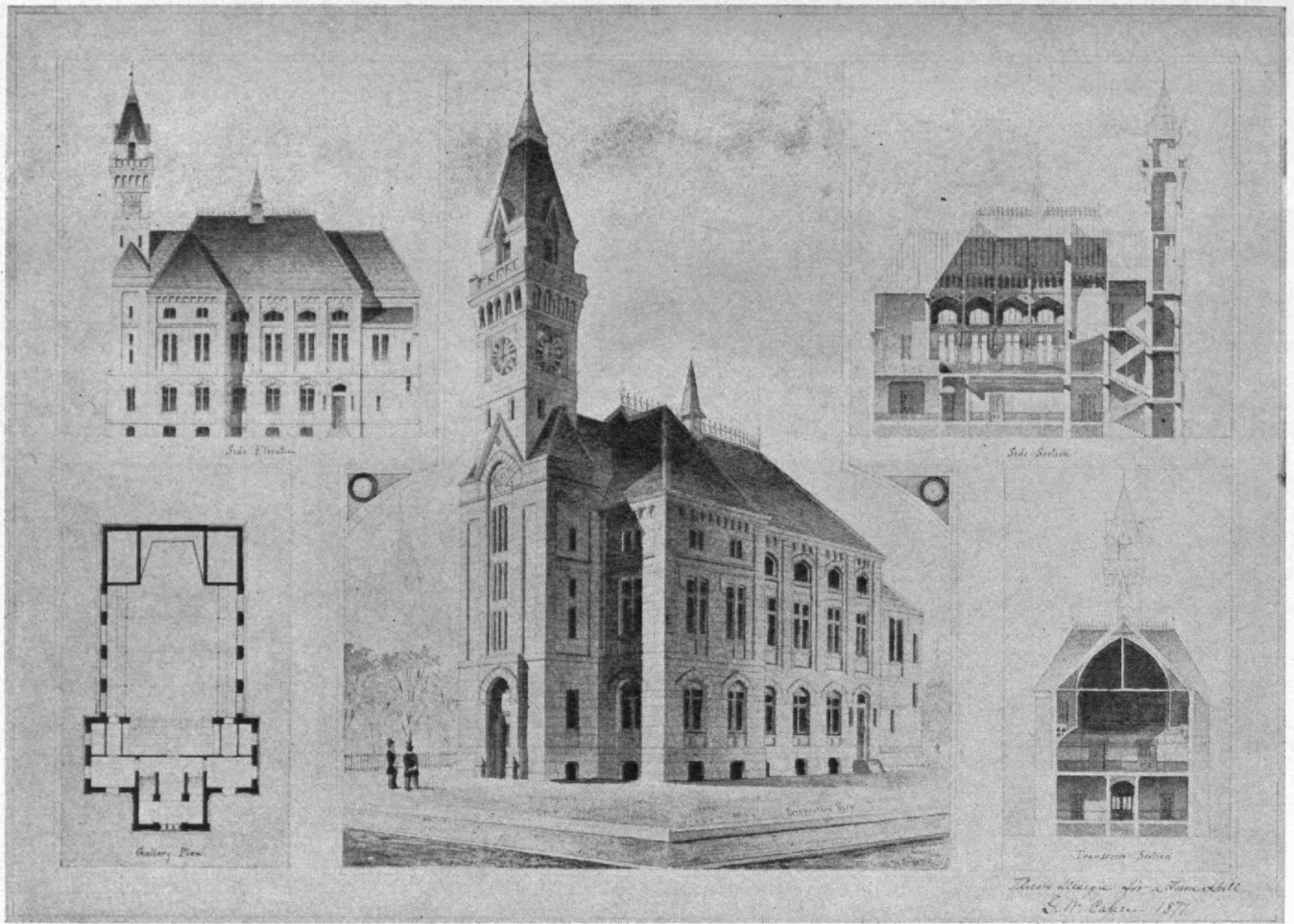
Water  
Cooling Coil

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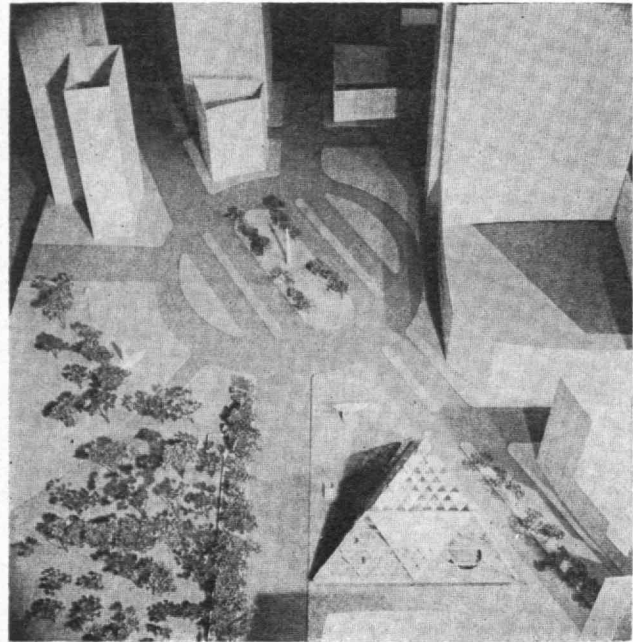
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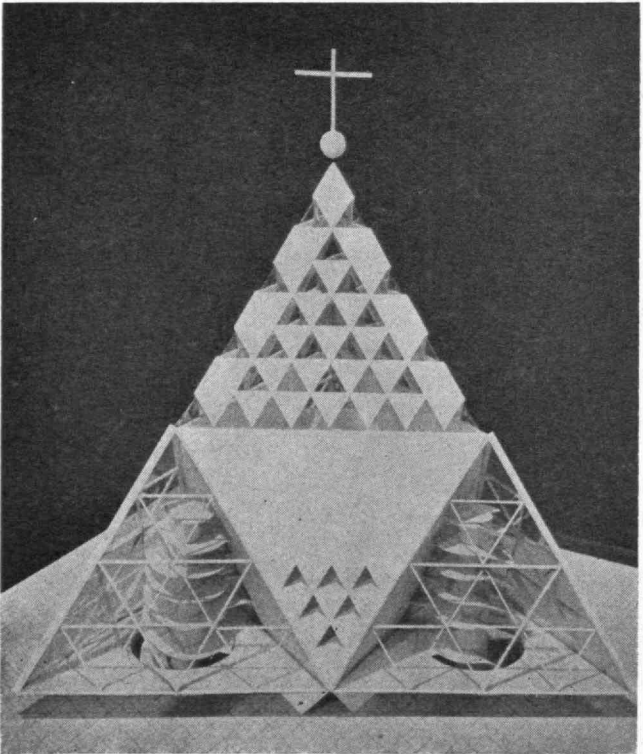


A 100-YEAR CHRONICLE of the M.I.T. School of Architecture and Planning, by Caroline Shillaber, published by M.I.T. this spring, contains these and other examples of work done in the oldest school of architecture in the United States. Above is a Thesis Design for

a Town Hall, by George W. Capen, '77, and below is a more contemporary project. The Chronicle, says Dean Pietro Belluschi, shows "the earnestness and wisdom of our forefathers in searching for native expressions, and their pervading sense of optimism."



T. John Musho, '59, chose Columbus Circle in New York City for the site for his Master's thesis: A Catholic Information Center free from its surroundings.







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And, remind yourself, too, that the Trust Company can offer experience and ideas in conferences with you and your attorney which may make your Will even more effective in carrying out your aims.

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**WFF 'N PROOF, The Game of Modern Logic**, by Layman E. Allen (published privately in 1962 at P.O. Box 71, New Haven, Conn., \$6.25), presents a self-instruction idea, and is reviewed here by Philip Franklin, Professor of Mathematics at M.I.T.

THIS is a lithoprinted instruction manual for playing a series of games. These games were designed to be amusing, but also to teach some aspects of mathematical logic. There are 21 types, arranged in order of sophistication. The first and second game involve the definition of a *well-informed formula* (WFF). The third introduces one rule of inference used to construct a *proof*. The remaining 10 rules of inference are gradually introduced in later versions of the game.

The kit for playing the game consists mainly of a number of small cubes, half marked with the letter *i* (in), *o* (out), and *p, q, r, s* (sentences). The other half are marked with *N* (negation), *R* (reiteration), and *C, A, K, E* (connectives). Shaking a number of cubes, like dice, produces a set of capital and small letters from some of which the player may be able to make combinations giving well-formed formulas, or from these, combined with the rules of implication he may form valid proofs. These and correction of mistakes by previous players are the basis of scoring in the game.

The games have been used with success as an aid in teaching the formal manipulations of propositional calculus to elementary and high school students.

**DOMESTIC AIRLINE EFFICIENCY**, by Ronald E. Miller (*The M.I.T. Press*, \$6), is reviewed by Assistant Professor Secor D. Browne and Robert W. Simpson, G, of the Department of Aeronautics and Astronautics.

THE APPLICATION of computer technology has long been of interest to the airline industry for a wide range of problems including crew scheduling, reservation systems, flight planning, and basic marketing and economic studies. Dr. Miller's book is an interesting attempt to apply linear programming to defining the operating efficiency of our domestic trunk system.

Beginning with a basic survey of the economic and regulatory background of the U.S. airline industry, Dr. Miller proceeds to a discussion of the problems of applying linear programming to determine the "least cost" operation of a selected transportation network. His valuable discussion of the need for integer type variables, the transshipment problem, etc., is well documented with references to work of a similar nature.

Unfortunately, the application in Chapter 5 uses a much simplified model which fails to describe the problem adequately, and leads to a rather trivial solution. In comparing the results of the computer with actual performance for the year 1957, Dr. Miller concludes, for similar daily utilization of the aircraft, and a similar passenger load factor of 60 per cent, that airline passenger transportation between nine major cities of the U.S. could have been carried out at a cost of \$4,200,000 compared to his estimated actual cost of \$9,100,000. In determining efficiency in the sense applied here, the average load factor is a good criterion, and such a large difference in costs can only be explained by a similar difference in load factor. The results show that Dr. Miller's actual flights average only 20 passengers per flight, which would be closer to a 30 per cent load factor. Pas-

senger flow due to transshipment which is not included in the CAB origin-destination traffic figures explains why the airlines found it necessary to schedule more flights, and gives an indication of the critical nature of this aspect of transportation, and the necessity for its inclusion.

The errors which occur in the application of this technique render the numerical results invalid, and unfortunately, lead to a number of unwarranted conclusions. The rapid increase in knowledge and computer technology have made possible more sophisticated, realistic analyses of a similar nature, however, and the example of this work will provide an interesting stepping stone to future investigations by economists, airline managements, and perhaps (with some persuasion!) even the Civil Aeronautics Board.

*Domestic Airline Efficiency* is a book of timely interest and value to those interested in modern transportation economics, and an interesting contribution to the growing literature on the application of linear programming (and associated techniques) to the complex problems of managing a modern airline system.

**THE COMPUTER REVOLUTION**, by Edmund C. Berkeley (*Doubleday & Co.*, \$4.50), reviewed by Thomas C. Bartee of the M.I.T. Lincoln Laboratory.

EDMUND C. BERKELEY is probably the best known writer of popular books on digital computers. He consistently manages a direct simple style, has mastered the art of the analogy, and has an enviable fund of data.

This book is divided into four parts. The first part introduces such basic concepts as *memory*, *program*, and *register*; this is followed by a brief history which progresses from the abacus to the 1944 Harvard IBM machine, touching lightly on Pascal, Babbage, and Hollerith en route. Also included in the first part is a brief introduction to AND circuits, OR circuits, binary adders, etc.—the things of which computers are made—and to Boolean algebra.

Part Two is called "The Discussing Computer" and relates some interesting experiments in programming computers to converse with humans. This leads to some linguistic considerations which are explained in such colorful terms as *brick-words* and *cement-words*. It is very apparent that Mr. Berkeley is a true "believer" with regard to whether or not computers think, have ideas, etc. He looks forward to computers which can "discuss logically and entertainingly and usefully." This cheery optimism makes for lively reading but should be contrasted with the views of the "there ain't nothin' like a dame" group.

In the third and fourth sections of his book, Berkeley turns his writing talents from explaining computer fundamentals to examining the applications of computers and some of the impacts of computer technology in modern society. In these sections he mixes unemployment caused by machines with a world's champion chess playing computer, and nuclear warfare with programmed vacuum cleaners. Berkeley's crystal ball supplies him with a strange mixture of cheery optimism and bleak pessimism on opposing pages, and I had little difficulty in disagreeing with many of his opinions. I cannot disagree with his decision to publish his opinions, but wish he had labeled his opinions as opinions instead of writing both facts and feelings in the same textual tone.

# 67 M. I. T. alumni are among the imaginative, highly motivated scientists and engineers who have joined Aerospace Corporation

A. S. Avakian, 1935  
W. W. Baldwin, 1939  
A. R. Blackwell, 1951  
A. J. Boardman, 1955  
P. B. Bos, 1955  
W. B. Brewer, 1940  
R. W. Bruce, 1957  
M. C. Calta, 1956  
A. B. Chatfield, 1951  
M. A. Clark, 1952  
G. W. Coleman, 1947  
T. J. Conner, 1956  
R. M. Copsey, 1944  
W. H. Cullin, 1947  
D. M. Dix, 1961  
C. Downing, 1958  
H. E. Eley, 1949  
M. Epstein, 1953  
R. V. Erilane, 1959  
J. A. Feyk, 1950  
G. B. Fox, 1954  
V. C. Frost, 1937

I. A. Getting, 1933  
R. G. Graham, 1961  
E. A. Goldberg, 1956  
R. C. Gore, 1958  
N. A. Gokcen, 1951  
A. D. Halenbeck, 1949  
R. E. Kendall, 1952  
H. A. Lang, 1942  
E. M. Lassiter, 1958  
D. Lee, 1946  
S. L. Levine, 1961  
D. E. Long, 1951  
A. J. Lum, 1952  
R. W. Macdonald, 1951  
D. Macpherson, 1956  
H. G. Maier, 1946  
R. W. Mascolo, 1951  
G. W. Masters, Jr., 1954  
J. S. Meditch, 1957  
P. H. Metzger, 1958  
W. G. Nance, 1955  
J. K. Okazaki, 1960  
J. E. Pierson, 1949

D. C. Pridmore-Brown, 1954  
R. S. Robins, 1949  
W. J. Russell, 1954  
L. M. Saslow, 1960  
P. R. Schultz, 1956  
F. I. Shimabukuro, 1956  
R. W. Slocum, 1959  
J. D. Sorrels, 1950  
A. N. Spector, 1957  
A. M. Stein, 1952  
T. Strand, 1947  
H. C. Taylor, III, 1954  
L. J. Tedeschi, 1952  
S. M. Tennant, 1950  
G. J. Todd, 1951  
E. R. Toporeck, 1931  
K. Walker, Jr., 1952  
C. J. Wang, 1946  
H. K. Weiss, 1938  
M. T. Weiss, 1950  
W. J. Wollenberg, 1952  
F. F. Yates, 1955

These men are actively contributing to Aerospace Corporation's mission in advanced ballistic missile, space, and re-entry systems. Their assignments include advanced planning, general systems engineering and technical direction, and experimental and theoretical research. § Currently expanding its technical staff to meet growing requirements, Aerospace Corporation is seeking unusually capable scientists and engineers. Men with backgrounds in mathematics, engineering, physics, and chemistry are invited to contact Mr. John Felos, Room 134, P.O. Box 95081, Los Angeles 45, California. Aerospace is an equal-opportunity employer.

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## Individuals Noteworthy

(Concluded from page 8)

### Honored for Teaching

THE FIRST Everett Moore Baker Award "in recognition of exceptional and demonstrated interest in undergraduate teaching," was presented at this year's Awards Convocation to Assistant Professor Alan J. Lazarus, '53. He was nominated by students and selected by an undergraduate committee, the chairman of the Faculty, and the President of M.I.T. The award was accompanied by a bronze medal and a prize of \$250.

### Instructors Honored

AWARDS of \$500 each for excellence in teaching in the M.I.T. Department of Electrical Engineering were won this year by *Ralph Alter*, '59, *Jonny Andersen*, '62, *Alan V. Oppenheim*, '59, *Roger W. Sudbury*, G, and *James F. Janak*, '60. Four of the awards were presented on behalf of the TV Shares Management Corporation and the fifth in honor of Professor Emeritus *Carlton E. Tucker*, '18.

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Alan J. Lazarus, '53

### New Posts

NAMED in the news of promotions, elections, and appointments recently were:

*Edwin S. Burdell*, '20, as Dean, Rollins College . . . *Percy Bugbee*, '20, as a Member, U.S. Public Health Service Advisory Committee on Accident Prevention . . . *Crawford H. Greenewalt*, '22, as an Executive Committeeman, Carnegie Institution of Washington . . . *Henry B. du Pont*, '23, *Pierre S. du Pont*, '33, and *Norman A. Copeland*, '36, respectively, as a Member, Finance Committee; as Vice-president and Member, Executive Committee; and as Assistant General Manager, Film Department—*E. I. du Pont de Nemours and Company, Inc.*;

*Vincent F. Gardner*, '29, as President-elect, American Society of Hospital Engineers, and as Vice-president, New England Hospital Engineers Society . . . *Frederick W. Green*, '32, as Vice-president—Sales, Nash Engineering Company . . . *Felix J. Conti*, '34, as President, Tredennick-Billings Company . . . *Russell Hastings, Jr.*, '34, as Director of Engineering and Vice-president, Clark A. G., Clark Equipment Company . . . *Hans J. Lang*, '36, as Vice-president, The Lummus Company . . . *John C. Proctor*, '38, and *Philip Bragar*, '48, respectively, as Assistant Director of Administration, and as Technical Services Director, The MITRE Corporation;

*Wilbur C. Rice*, '38, as President, Flomatic Corporation . . . *Howard O. McMahon*, '41, as Executive Vice-president, Arthur D. Little, Inc. . . . *Joseph H. Myers*, '41, as

Vice-president, Stanley Works . . . *David K. Wang*, '41, and *Menelaos J. Moore*, '50, respectively, as Manager, Air Defense Division, and as Manager—Operations, Solid Rocket Plant, Aerojet-General Corporation;

*Louis Rosenblum*, '42, as Editorial Vice-president, the Society of Photographic Scientists and Engineers . . . *Jephtha H. Wade*, 3d, '45, as a Trustee, Boston Museum of Fine Arts . . . *Frederick J. Ross, Jr.*, '46, as General Manager, Bonded Abrasives Division, The Carborundum Company . . . *Peter C. Hyzer*, '49, as Brigadier General, U.S. Army Corps of Engineers of New England . . . *David E. Gushee*, '50, as Editor, "Industrial and Engineering Chemistry" . . . *Arthur S. Chivers*, '52, as Vice-president—New Business Development, Barry Wright Corporation;

*Allan J. MacEachen*, '53, as Minister of Labor, 26th Parliament, Canada . . . *Narendra P. Loomba*, '54, as Professor of Economics, Lehigh University . . . *Daniel G. W. del Rio*, '55, as Vice-president and Treasurer, Maxwell, Franklin & Company, Inc. . . . *Harry L. Bishop, Jr.*, '56, as Staff Assistant to Vice-president—Production, Allegheny Ludlum Steel Corporation . . . *Kenneth L. Nordvedt, Jr.*, '60, as a Junior Fellow, Harvard University.

### Honors to Alumni

RECIPIENTS of recent awards and similar distinctions have included:

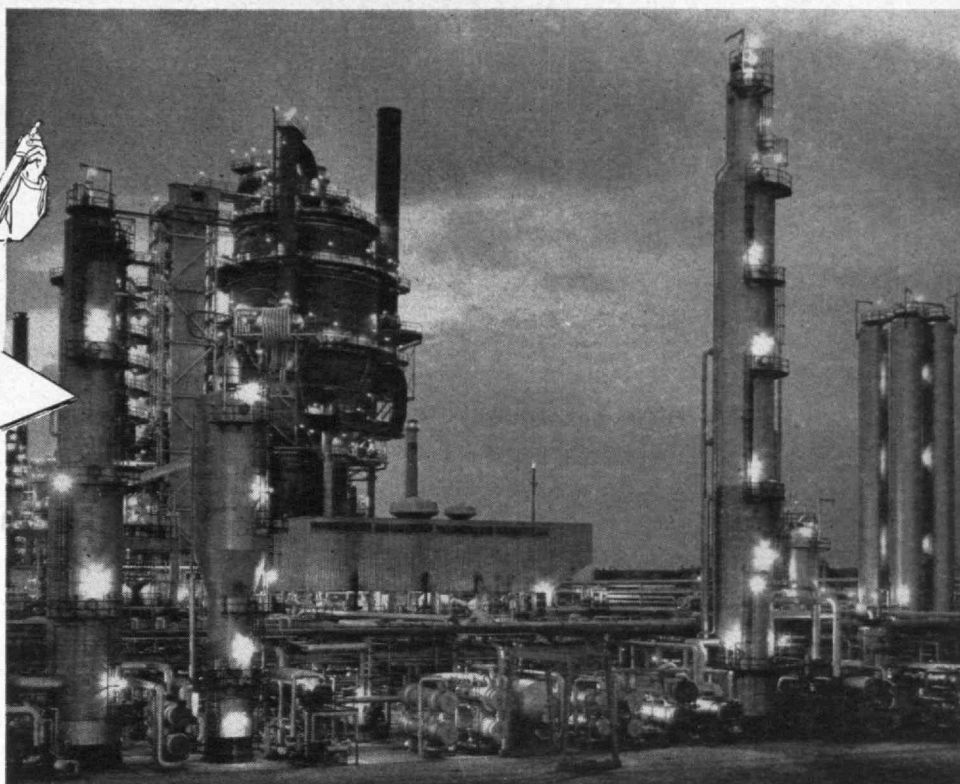
*J. Robert Bonnar*, '27, the 1963 Harold C. Chapin Award by the American Association of Textile Chemists and Colorists . . . *Frank A. Taylor*, '28, the Career Service Award by the National Civil Service League . . . *Morley G. Taylor*, '31, an Honorary Doctorate of Engineering by the Nova Scotia Technical College.

### Quarter Century Club

THE M.I.T. Quarter Century Club honored *Salvatore Castellano*, who is retiring after 35 years at the Institute, at its meeting this spring and welcomed to membership *Robert Masterson*, *John Barley*, *William Conly*, *William Oldham*, *Bernard Butler*, and *Richard Weir*. The Silver Club for women employed 25 years by M.I.T. welcomed to its roster *Mrs. Veranica Needham* and *Mrs. Ellen Gavin*.



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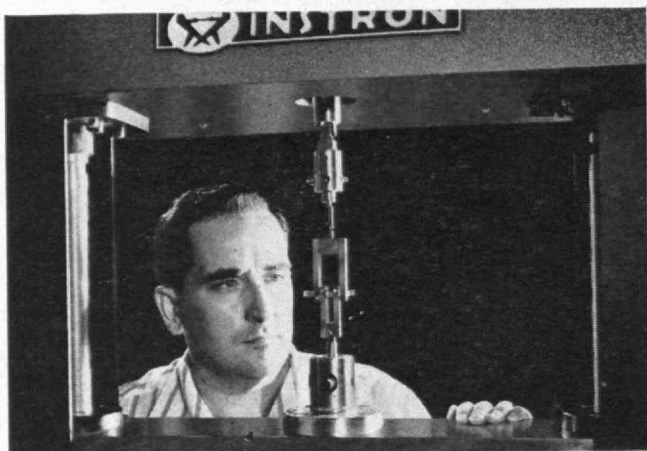
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# The Challenge of the materials age



## The two-phase materials concept

In this sixth year since man's first probe of space — an age in which structural materials *must* do the impossible — attention is being focused increasingly on the two-phase concept of material structure. A two-phase structure is a combination of two different materials of contrasting strength and elasticity. The result is a composite which produces a material whose properties are superior to either of its components used individually.

Sounds like a great new idea? "Great" it is — but "new" it isn't. Nature had it first, millions of years ago.

The two-phase concept is at least as old as, say, bamboo . . . a natural two-phase material combining cellulose fibers of high tensile strength in a matrix of lignin, which serves to cement the structure and provide elasticity.

Filament-wound glass fibers are an example of artificial two-phase material, in which glass fibers are combined with epoxy resin to form a material whose specific strength is two and a half times greater than that of any homogeneous material, including metal, glass, or plastic.

In applying the two-phase principle to space applications, the extraordinary properties of single-crystal filaments — (more informally called whiskers) as reinforcing agents, is attracting more and more attention. Whiskers are among the strongest materials known. Some are capable of withstanding stresses of several million pounds per square inch. And happily, some of them tend to retain much of their strength at very high temperatures.

Much of the exploration now being conducted on the problem of two-phase materials is being carried out with the aid of Instron equipment.

Instrons are sensitive and highly accurate testing instruments suitable for broad range of stress-strain studies. These include not only studies on single whiskers and high strength alloys, but in such areas as high polymer rheology, refractory metals and ceramics, textile fibers, and biological tissues.



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## The Orbiting Dipoles

(Continued from page 33)

tor, Carl F. J. Overhage, and Mr. Morrow. "The world will watch results with greatest interest," his message said. "Your careful preparatory co-operation deeply appreciated."

Each of the 400,000,000 fibers in the belt is an independent little satellite, and as they spread out into a ring 40,000 miles in circumference they will become increasingly difficult to detect without special equipment. The radio waves being directed toward them from the earth are scattered in all directions as they pass through the belt, and the signals reaching the receiving stations are composites of many reflections arriving at different times and frequencies. The work now under way is expected to indicate the actual usefulness of such a belt.

"Transcontinental radio communication by reflection off the orbiting dipoles has been successfully accomplished by teletype, voice, and high-speed digital data, for limited periods of time," Lincoln Laboratory reported on May 24. "The periods will grow longer as the circular belt becomes more fully developed and 24-hour operation should be possible in northern latitudes when the belt has been fully formed. . . . This is a long-term experiment. The early results are very encouraging, but the really significant results will come from the program of measurements and experiments that will continue for many months ahead."

The belt now forming is expected to disappear within five years. As radiation pressure from the sun forces the fibers down into the atmosphere they will burn up. To see just how the fibers are affected by such pressure, by the bombardment of micrometeorites, and by possible interactions with the earth's magnetic field, is one of the objectives of the present work.

It is believed that such a belt could simultaneously serve a great many exclusive communication circuits between widely separated cities. With two high-altitude belts, one over the equator and one over the poles, it should be possible in principle to communicate between any two points on the earth's surface in no more than two hops. The work

(Concluded on page 44)





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## The Orbiting Dipoles

(Concluded from page 42)

now being done under carefully controlled conditions was planned to reveal the degree to which such expectations can be fulfilled without adverse effects on other space activities or any branch of science.

Each fiber is only 1.77 centimeters long and .0018 centimeter thick (about one-third the thickness of a human hair), and weighs only about .00004 gram. If all of the copper fibers were laid out to make a flat sheet of material less than 1/1000th of an inch thick, it would cover only about half of a five-yard strip of a football field. The belt in which they are distributing themselves, however, is likely to be about 10 or 20 miles in width and thickness. The average distance between fibers is expected to be more than a quarter of a mile, and there will be only from 50 to 100 fibers in each cubic mile of the completed belt if it continues to grow as planned.

To be dispensed in this way, the fibers were packed like cordwood, parallel to each other, in disks mounted on a central shaft. The package was ejected from a canister by means of a radio signal from the ground, and was so designed as to spin and throw the fibers off when the naphthalene in which they were embedded vaporized. The whole assembly weighed about 90 pounds. The fibers accounted for 50 pounds, a telemetry package (containing instruments to measure temperature, spin rate, and tumble) weighed 15 pounds, and the rest of the mechanism 25 pounds.

Astronomers throughout the world are participating in observations of the formation of the dipole belt, and their efforts are being coordinated by representatives of the International Astronomical Union.

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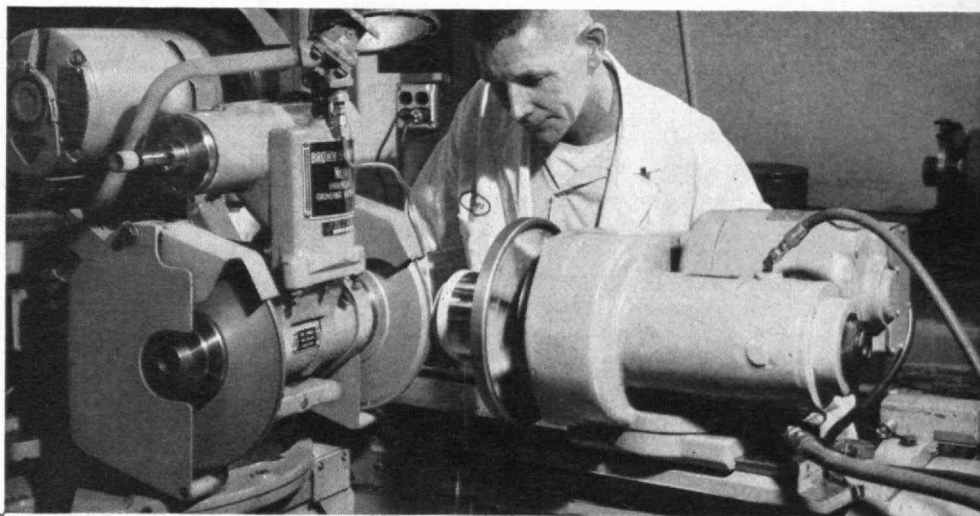
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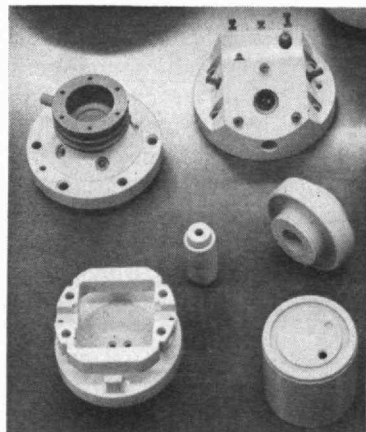
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## The 1963 Baccalaureate Sermon

(Continued from page 29)

a vast waste-land." Is it enough to establish television silence in your house; to write one letter to a local editor; to form a club dedicated to not listening to TV; to sign joint letters to the New York Times; to wire your Congressman; to testify before the FCC; to try to change the advertising quality of your own company although you are in the laboratory; to quit working on Telstar? Do you wonder why you don't even have a chance to refuse pay TV? Do you wonder if it is really Madison Avenue that prevents first-class sustaining programs? Can you buy your way out by making a contribution to Channel 2? You see, there are a range of choices, some more difficult than others. What most of you will do, however, is complain about it occasionally at lunch and turn it on most nights.

Let me offer a still more pointed example. Suppose you agree with Mr. Frank Stanton that our country should start a vast project of education in the backward areas of the world. He gives this, as I also would, a higher priority than beating the Russians to the moon or than military aid in Viet-Nam. He properly looks upon it as a big and long-range endeavor, not to be covered by a few volunteers or the appropriation of a few million dollars. Suppose you think this a good idea; where does it leave you? Will it be enough to agree with it, to write your Congressman about it, to pay the inevitable taxes uncomplainingly? Not at all. This program needs more than dollars. Could it occur to you that it might involve your body, your person, your dis-

comfort, your risk, your dedication of some years of personal life to young strangers in Ghana or Nigeria or Burma? Probably not much less will do. Americans are not going to be able to buy their way out of trouble. And it is about time we realized it.

Of course this does not mean that all of you should rush out and enlist for service in Africa. But it probably means that some of you should. And it means very certainly that a comparable sacrifice of time and of ease is required of each of us in some cause or other. Naturally, you cannot successfully be activists in every cause. That would be to dissipate your energies foolishly and ineffectively. But it is even more irresponsible to be passive about all causes. You should learn to know something about all the problems and then make up your mind whether you want to work for desegregation or arms control or population control or perhaps something less formidable, and then find a way to put your personal shoulders to the wheels.

Each of us can make a list of beastly and real current problems. They often seem too obdurate to cope with, and it is tempting to give up and to dance in the streets or to crawl into a cave to wait the end. But each one of the problems has handles which can be grasped; and only if we try to understand each one and then to persist in our determination that our actions can be wise can there be any hope. The important thing is that the grasping and the study and the determination are all possible and that the hope is there, if only we, the citizens, will do the grasping.

We must do the grasping because the hope does not lie in trusting the solution of the problems to a few leaders—Mr. Webb for space, Mr. Rusk for statecraft, Mr. Heller for economics, Mr. McNamara for defense, Mr. Conant for education, Mr. Robert Kennedy for civil liberties, Mr. Bundy for over-all advice, and so on. We need the leaders and the experts but if the democracy is to survive we must be able to know how to ask the right questions and how to be discontent with evasive or wrong answers from our Representatives and Senators, from our Supreme Court, even from the President whether his name is Eisenhower or Kennedy.

Every friendly observer of American democracy from de Tocqueville on has suggested that it might be most imperiled by the failure of civic education to keep up with civic duty. Today the demands for this education are more complex than ever.

For each of our great and puzzling defects in America there is a somewhat compensating virtue. Our problem is to diminish the one and increase the other.

ON BALANCE, and despite your difficulties, I find it hard to be sorry for you. You are not in more peril than were young Jews on the eve of the exodus, than young Athenians on the eve of Thermopylae, than young Romans when the Cimbri and the Teutones were knocking at the gate, than young Hungarians on that Christmas Day in the Thirteenth Century when Batu the Mongol led his troops across the frozen Danube from Pest to Buda, or than young Britons who peered anxiously through the fogs of the Channel to learn the events of Dunkirk.

Many young men have suffered in vain and in the end their nations have come crashing down. But not  
(Concluded on page 48)

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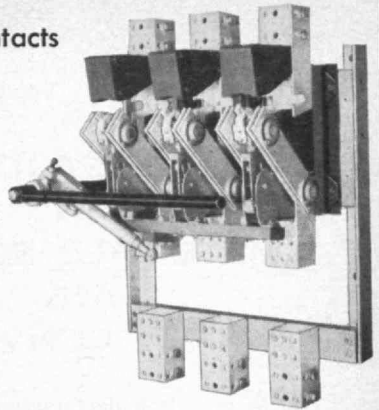
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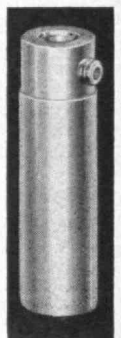
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## The 1963 Baccalaureate Sermon

*(Concluded from page 46)*

all suffered in vain. All the nations did not come crashing down. Nations do not have to fail and there is no omniscient or inexorable prediction in history. If a democratic nation has heroism and courage and tenacity and good will and intelligence among its citizens, it need not fall or fade away. Your character is your own. It has been cultivated by your education which has also given you a chance to exercise your intelligence. Do not throw away this chance. Continue to want to know because if you do not want to know, you will never know. Continue to know how to know and be relentless in your pursuit of the important truths, those which are important only to you and those which are important to all your fellowmen. It is the least your world has the right to ask of you, whether in the end your place is lofty or lowly.

- American poets can give you any advice you want to hear. You can permit yourself to be discouraged, as the late Robinson Jeffers became. Then you might say with him:

We shall have to accept certain limitations  
In future, and abandon some humane dreams . . .

If civilization goes down, that  
Would be an event to contemplate.

Sometimes this great user of words has been compared to a Greek tragic writer, but in him was little of the spirit of the Greek—or of America. You will find that rather in MacLeish:

The world was always yours: you will not take it.

And still more firmly in Whitman:

My foothold is tenon'd and mortis'd in granite,  
I laugh at what you call dissolution,  
And I know the amplitude of time.

. . .

And I know that the hand of God is the promise of my own,  
And I know that the spirit of God is the brother of my own,  
And that all the men ever born are also my brothers, and  
the women my sisters and lovers,  
And that a kelson of the creation is love . . .

May you walk through the future, not with Jeffers but with Whitman. Do not let fear, laziness, convenience, your friends, your employers, your institution, your establishment dampen your determination to be an active citizen. Choose to be Prince Hamlet, not Polonius. Laugh at dissolution, know the amplitude of time and remember that the kelson of the creation is love.

## NSF Graduate Fellowships

TO ENCOURAGE outstanding persons to obtain advanced training in the sciences, mathematics, and engineering, the National Science Foundation (NSF) awarded graduate fellowships for 1963-1964 to 1,880 students. Of this number, M.I.T. produced 171, Harvard University, 170, and the University of California, 168. The same three schools led the list of institutions selected by the NSF Fellows for their graduate work, but in the reverse order: 230 chose the University of California, 225 chose Harvard University, and 197 chose M.I.T.



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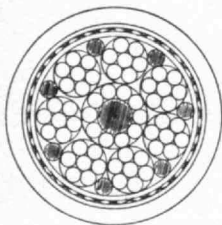
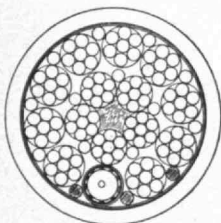
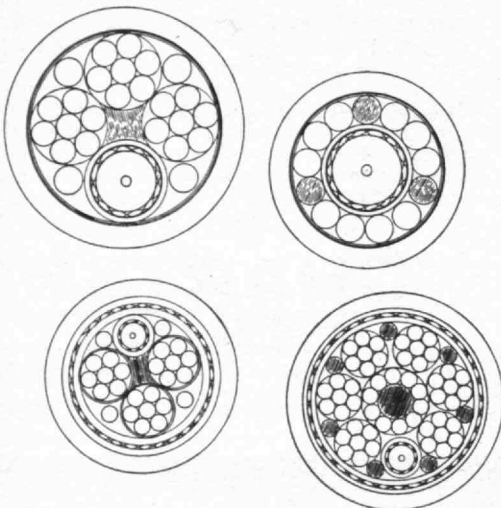
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## Trend of Affairs

(Continued from page 17)

### The Magic Slate Project

M.I.T. RESEARCHERS presented five papers this year at the Spring Joint Computer Conference in Detroit on a computer-aided design system. One of these papers, by Douglas T. Ross, '54, and Jorge E. Rodriguez, '60, won the award of the American Federation of Information Processing Societies, which sponsored the conference, and all were newsworthy.

The system described will be a sort of magic slate-and-pen set for engineers, when it is perfected, that will take drudgery out of designing anything from an electrical circuit to a jet airplane. In essence, it will allow a designer to make freehand sketches on the face of an oscilloscope hooked to a computer—in other words, to "talk" to the computer by means of drawings—and have the computer "understand" what the pictures and associated word statements mean. The machine then will handle the detail work for the designer.

By turning a console knob, the designer will be able either to enlarge a small section of his sketch, in order to draw in some tiny part, or to reduce the image on his scope so that he can view the over-all design. The magnification can be so great that a designer will be able to work on what will amount to a sheet of drawing paper a third of a mile on each side, even though he looks at it only on an oscilloscope less than a foot square.

"On some far-off day," said one of the papers, "it may be possible to call up last year's automobile on the oscilloscope, to wave the magic wand of the light pen, and in a very short time to create the modified version from the old. This will be, in a sense, a mechanization of experience."

The paper by Mr. Ross and Mr. Rodriguez described their efforts to work out the theoretical basis for such a complete system. It must be founded, they pointed out, on an understanding of problem structure, and should contain a language mechanism that describes the sub-elements of a problem, how they are interconnected, and is itself a model of the problem. Their research has led to the formulation of a new language theory, and is directed toward a system in which mathematics, logic, and linguistics will be inextricably intertwined in a way that will have meaning to a computer.

Associate Professor Steven A. Coons, '32, described the growth of the present project out of earlier work such as led to automatically programmed machine tools. Two other papers, by Ivan E. Sutherland, and Timothy E. Johnson, G, dealt with the successes thus far with the system called Sketchpad.\* In another paper, Robert H. Stotz described the development of the console equipment.

The Air Force is supporting the work reported and it is being done co-operatively by groups in the Electronic Systems Laboratory, directed by Professor J. Francis Reintjes; and the Engineering Design Division, headed by Professor Robert W. Mann, '50, in the Department of Mechanical Engineering.

(The Trend of Affairs is continued on page 52)

\*See "A Computer-Aided Design System," Technology Review, March, 1963, page 27.

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**The MITROS Project**

SEVENTY graduate students designed a weather satellite this year that would differ greatly from those launched thus far and, they argued, fill a great gap in the data available to weather forecasters.

Called MITROS (the M.I.T. Tropical Observational Satellite), this one would follow the equator at an altitude of about 2,500 nautical miles and send back continuous television and infrared pictures of a belt 4,000 miles wide, in which much of our weather develops. It would be launched at sea from a special ship and put into the orbit by a five-stage, solid-fuel rocket.

Up there, it would assume a dumbbell shape. A cerium-144 power source at one end would supply the sensory apparatus at the other. The ends would be separated by a 46-foot rod, and the observing apparatus would be held steady by the satellite's shape and a stabilizing gyroscope. Down here, tracking stations costing only from \$25,000 to \$30,000 apiece, could follow it across the sky and receive pictures from it. Even relatively poor nations could afford such stations, it was argued, and some might also be put on commercial ships. Since the satellite would send ordinary TV pictures, minimal processing would suffice to make them understandable and usable.

Visiting Professor William Bollay of the Department of Aeronautics and Astronautics headed the Faculty committee which supervised this educational exercise and the participants came from seven Depart-

ments. The students organized themselves as if they were in a project office—with a launch facilities group, a booster design group, a communications design group, etc., including a management group to co-ordinate the concurrent efforts. Project managers during the course of the work were Robert C. Gammill, '60, Malcolm M. Jones, '57, and Philip K. Chapman, G.

To lecture before the group on specific aspects of the problem, the Director of the U.S. Weather Bureau's National Weather Satellite Center, and project engineers for the Transit, Tiros, and Telstar satellites came to Cambridge. The U.S. Air Force Systems Command was interested, too, and flew the whole group to Cape Canaveral for a briefing on launching systems at the Atlantic Missile Range.

One purpose of the work, according to Assistant Dean William W. Seifert, '47, of the School of Engineering, was to show the students that in a major and complex system, designs and considerations in one small part are reflected through the entire project. Members of the Faculty on Professor Bollay's supervising committee included Professors Charles L. Miller, '51, Yao T. Li, '38, and Rene H. Miller; Associate Professors Seifert and Henry M. Paynter, '44, and Assistant Professor Dwight M. B. Baumann, '57. Throughout the work, however, the students made their own engineering decisions, and agreed among themselves on the trade-offs and compromises necessary; and finally, they formally presented their proposals in the Little Theater on May 21 before a jury of interested instructors and attentive experts from government and industry.

*(Continued on page 54)*

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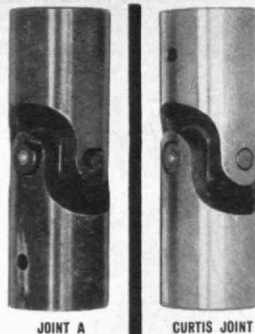
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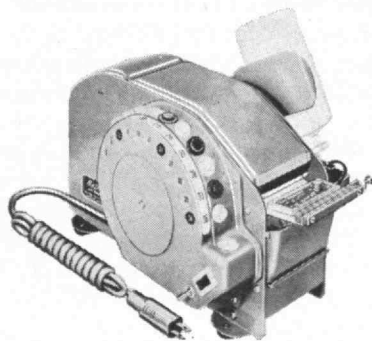
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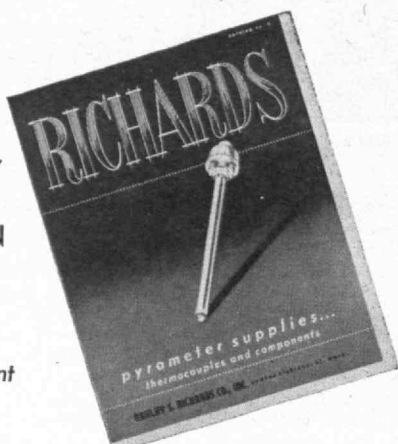
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## Trend of Affairs

(Continued from page 52)

### The Alumni Council's Meeting

SPEAKERS at the M.I.T. Alumni Council's final meeting this spring, on May 27 in the Faculty Club, emphasized the impact of residential changes on the quality of living and that of an interdepartmental research center on the quality of education at M.I.T.

Kenneth R. Wadleigh, '43, Dean of Student Affairs, reviewed improvements and present needs in campus housing. The planners' goals, he said, are flexibility, individuality, and privacy.

Robert A. Smith, Director of the Center for Materials Science and Engineering, for which a large building is now being erected in what was formerly the main parking lot, emphasized the importance of taking students to "the edge of knowledge" and letting them share the excitement of modern research.

The Association's President, William L. Taggart, Jr., '27, presided; Gregory Smith, '30, spoke about Alumni Day; Kenneth S. Brock, '48, reported on the Alumni Fund; and Leicester F. Hamilton, '14, presented nominations for honorary membership in the Association.

### The Commissioning Ceremony

TWENTY-THREE men of M.I.T.'s Class of 1963 received commissions in the U.S. Army Reserve, 18 in the Naval Reserve, one in the Air Force Reserve, and one in the Regular Army, at exercises in the Kresge Auditorium on June 6. Fourteen others will be commissioned later. Major General James McCormack, '37, Vice-president of M.I.T., presided and Colonel Robert B. Braid spoke for the Army, Rear Admiral Robert H. Speck for the Navy, and Colonel John A. Ryan, Jr., '46, for the Air Force. Music was provided by the Needham High School Band.

### Lowell Institute's Commencement

CHARLES A. RICHARDSON, a 1929 Lowell Institute graduate who is now vice-president and director of the Perini Corporation, spoke at this famous school's commencement exercises on May 23, and emphasized the continuing need for better ways of doing old jobs. "New opportunities are developing each day in the specialty fields," he said, "but don't overlook older industries."

Professor Charles L. Miller, '51, extended M.I.T.'s congratulations to the class. Lowell graduates who have used machines in the past to extend physical capabilities, he said, will use computers within the next decade to extend mental capabilities.

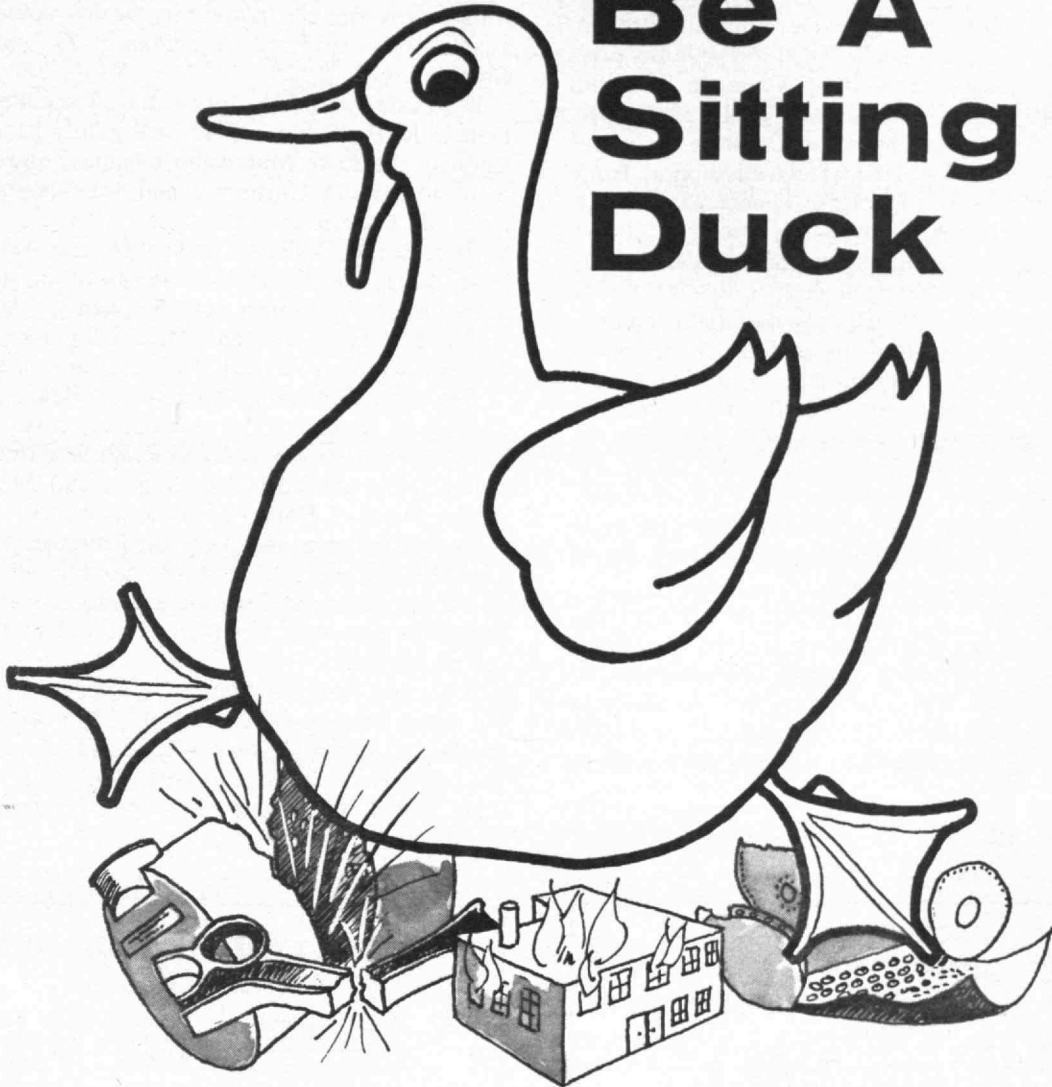
The Charles F. Park Award was presented by John H. Mains, '48, to William F. Nicholson, an engineering associate with the New England Telephone and Telegraph Company.

Thirty-seven graduate certificates were awarded to men successfully completing a two-year electrical or mechanical program. One graduate also completed an advanced supplementary course, and two men received their second certificates. For the second time in the school's 60-year history, a woman was among the graduates. Fifty-one students earned certificates for completion of one-year supplementary courses.

(Concluded on page 56)



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### Inter-American Work Advances

THE U.S. Agency for International Development through the Alliance for Progress has awarded a \$500,000 contract to M.I.T. to support its Inter-American Program in Civil Engineering.\* This program was endowed in 1962 by a \$250,000 grant from the Carnegie Corporation of New York, and has also received support from the Creole Foundation in Caracas, Venezuela, and the Dow Chemical Company of Midland, Mich.

It provides for teams of Faculty and students from M.I.T. and Latin American universities to tackle civil engineering problems of technical, social, and economic importance. The initial problems include setting up a computer research center in Colombia, investigating the settlement when buildings are placed on soft soils in Venezuela, studying sedimentation and salt-water intrusion in the canal linking Venezuela's Lake Maracaibo oil fields with the sea, a general study in Chile of water-resource problems, and a co-operative investigation in Mexico of beach erosion. The first teams will be in Latin America most of this summer.

All of the projects will involve the most recent engineering techniques, and Professor Charles L. Miller, '51, the program's Director, expects knowledge to be gained that will be useful both locally and elsewhere in the world. The problems in the Maracaibo Channel are similar to those in San Francisco Bay and the mouth of

the Hudson River in New York, and Venezuela's soft-soil problems are analogous to those in other lands.

Assistant Professor Paul O. Roberts, Jr., '57, will head the computer research center project in Bogota with a group at the University de los Andes, and be assisted by William A. Jessiman, '63, and Dale G. Gladding, G.

Professor Arthur T. Ippen and Associate Professor Donald R. F. Harleman, '47, will jointly head the team studying the Lake Maracaibo Channel, and work with men from Zulia University and the Instituto de Nacional de Canalizaciones.

Professor T. William Lambe, '44, and Assistant Professor Harry M. Horn will jointly head the study of soil instability in Venezuela, and Stephen C. Aldrich, '63, will be a research assistant. They will work with a Universidad Católica Andrés Bello de Caracas group.

Associate Professor Warren G. Bennis, '55, and Charles H. Savage, Jr., a research associate, will be co-supervisors of a study of sociological effects of computers to be carried out in Bogota and Medellin, and Andre Priem of Harvard will be associated with them.

Professor Ippen and Assistant Professor Ronald McLaughlin already are working with Fernán Ibañez, G, of the University of Chile on a study of water-resource problems, and have Jonathan W. Bulkley, '61, as a research assistant.

Associate Professor Peter S. Eagleson, '56, will head the group studying beach erosion jointly with a Mexican group, and James E. Dailey, '63, and Richard M. Males, '63, will be research assistants. They will use a large scale model basin which has been constructed at the University of Mexico.

\*See "Inter-American Civil Engineering," by Frederick J. McGarry, '50, March, 1963, page 25.

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(Concluded from page 32)

microbiology, histology, physiology, food technology, and nutrition will be required, and the theses will involve clinical investigations. Students with previous advanced training in mathematics and basic sciences may earn the degree in less than the prescribed time, however, and those with deficiencies may need more.

Initial users of the clinical center for patient hospitalization will include the Radioactivity Center of the Department of Physics, the Occupational Medical Service of the Medical Department, and the Psychology Section of the Department of Economics and Social Science, in addition to the Department of Nutrition and Food Science.

The Radioactivity Center for several years has been studying individuals who have been exposed to radioactive substances to determine the long-term effects of such substances. It is directed by Professor Robley D. Evans, assisted by Dr. Samuel D. Clark, Associate Director of the Medical Department.

In the Occupational Medical Service, with Dr. Harriet L. Hardy in charge, beryllium toxicity cases among workers in the fluorescent lamp industry have been studied for several years. She will use the new facilities to investigate similarities between beryllium poisoning and the disease known as sarcoidosis, the cause of which is largely obscure.

The psychologists, headed by Professor Hans-Lukas Teuber, will use the clinical center to further their long-term studies of persons with brain injuries. Dr. Teuber and his associates are particularly interested in the effects of such injuries on behavior, and man's capacity for recovery after brain damage.

Dr. Scrimshaw and Dr. Watkin of the Department of Nutrition and Food Science are engaged in large-scale studies for the U.S. Army on the influence of stress (both from emotion and from infection) and prolonged physical work on man's nutritional needs. This work requires hospital facilities in order that volunteer subjects may undergo careful metabolic studies in a controlled environment. Dr. Watkin and Alfred E. Harper, Professor of Nutrition, also have been concerned with problems pertinent to feeding men in space.

As occasions arise, the center will also be available to other groups whose research may create a need for facilities for patient care and study.

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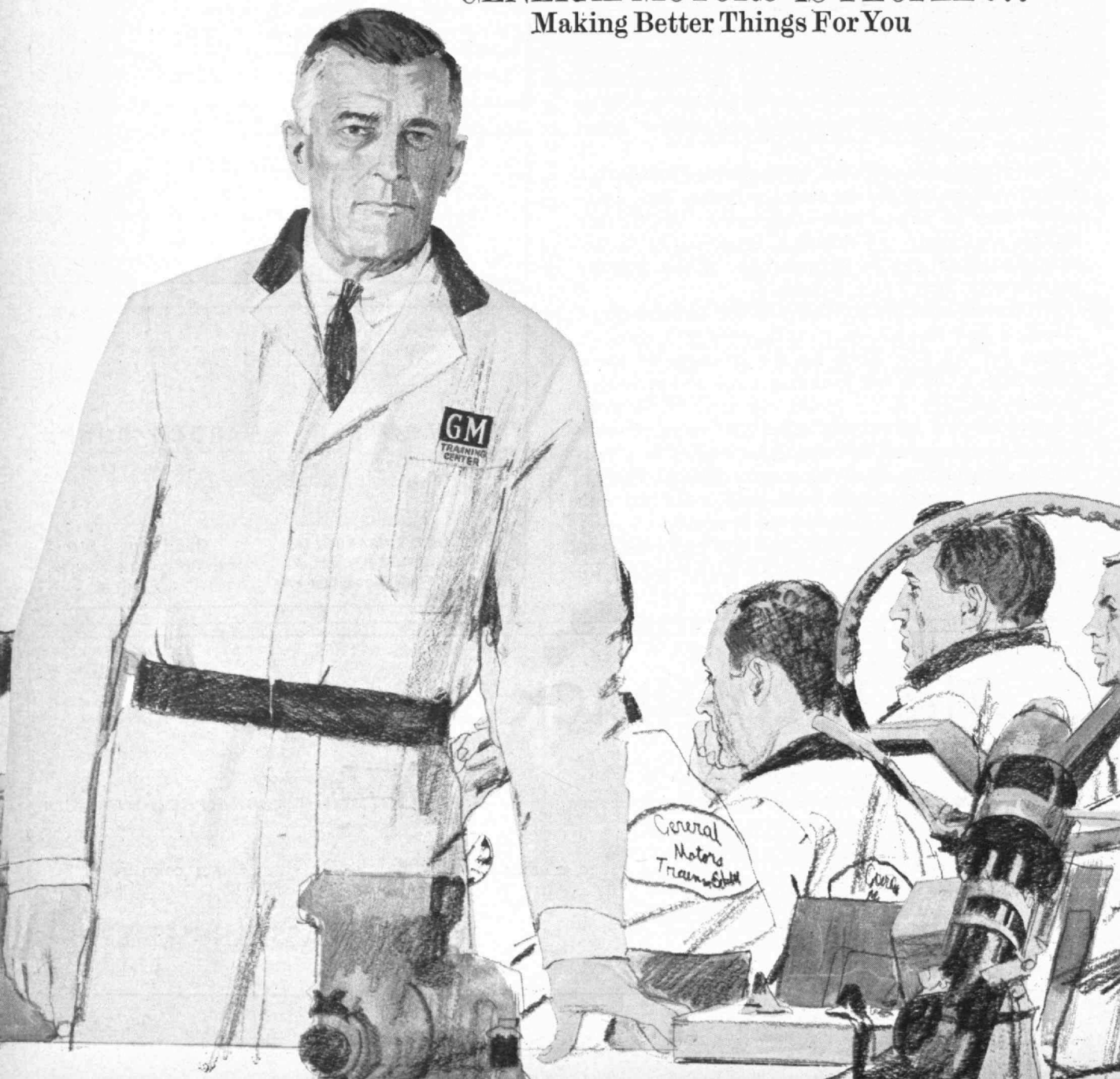
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# Institute Yesteryears

*As recalled by the late H. E. Lobdell, '17*

## 25 Years Ago

ON JULY 1, Marshall B. Dalton, '15, President of the Boston Manufacturers Mutual Fire Insurance Company, retired as the 44th President of the Alumni Association, being succeeded in that office by H. B. Richmond, '14, Treasurer of the General Radio Company; and Mr. Richmond, who had served as Vice-president of the Association during the Dalton administration, was succeeded in that office by Raymond Stevens, '17.

Lawrence Allen, '07, retired as a member of the Executive Committee to which Hovey T. Freeman, '16, and Edwin D. Ryer, '20, were elected.\*

Louis S. Cates, '02, Hovey T. Freeman, '16, and Mr. Richmond retired as Alumni Term Members of the Institute's Corporation, their successors for 1938-1943 being Harry P. Charlesworth, '05, Donald G. Robbins, '07, and Mr. Dalton.†

## 50 Years Ago

THE BOSTON *Evening Transcript* reported: "The course of lectures announced for the coming half-year at the Institute of Technology marks the opening of a new era in aviation in this country. The construction of aeroplanes here has hitherto been an art. It is today in the process of becoming a science, and in this development the course of the Institute constitutes the initial step.

"Technology, which turns out many varieties of engineers—electrical, civil, mechanical and others—is now looking toward the production of the very latest of all, the aeronautical engineer. . . .

"When the flying machine first publicly appeared in this country, back in 1908, it will be remembered what universal enthusiasm was aroused. Immediately most educational institutions, or men connected with them, cast about to discover means for sharing in the benefits of this new kind of locomotion. Colleges and schools all over the country founded aero clubs and went to work building aeroplanes and gliders with a vim which did credit to their energy rather than to their understanding. Out of all this furore has come absolutely nothing of value to aviation. . . .

"To the rule of general hysteria, however, there was one notable exception. As long ago as 1896, at Technology, through the work of Gaetano Lanza, now professor emeritus, a beginning was made in a direction where educational institutions could really be of service. Working with an apparatus which was woefully inadequate because of lack of funds, he directed the work of several students in aerodynamics.

"His experiments were directed mainly to ascertain the lift and drift of surfaces at different angles in air—

\*Two of those named above subsequently served as Presidents of the Association, namely: Stevens as the 51st President in 1944-1945, and Ryer as the 59th in 1952-1953.

†Later, three of those named above were elected Life Members: Cates and Dalton in 1943, and Richmond in 1952.

## An Old-Timer Well Treated

*(Concluded from page 31)*

build this machine. Among the men whom he and Professor Evans recruited to help them was Earle White, who was then working for Dean George R. Harrison. Mr. White has been this cyclotron's chief operator ever since it was built, and will continue to say who can and who can't run the thing. Scars on his hands suggest how great the pressures once were and how he learned to respect radiation's bite. They also explain in part the impeccable safety record that has been maintained now for many years.

A new device, to which Mr. White points with especial pride, was added to the equipment during the recent overhauling. It is a mechanical system that removes targets from the cyclotron automatically. It breaks the vacuum, disconnects the water cooling, and removes the hot material from the machine. It then hoists the stuff up to an angular hole in the shielding wall, through which the material is dropped directly into a waiting receptacle in the nearby radiochemistry laboratory. The system will do this, Mr. White expects, in about 15 seconds—which is much quicker than a very fast man could do it.

No such aids were available—not even dosimeters—in this machine's exciting early days. It provided the material with which Professor Evans and his medical colleagues introduced a new method of diagnosing and treating thyroid disorders. It figured, too, in their studies of the preservation of whole blood. It helped the Manhattan Project physicists, and when Harvard's cyclotron was rushed off to Los Alamos and others, too, were wholly devoted to war work, this cyclotron was for a time the only source in the country from which hospitals could obtain urgently needed isotopes. Mr. White and his associates kept the machine on beam from 128 to 150 hours a week in those hectic days.

Recalling such feats and noting the old \$30,000 machine's fine new setting, men on the staff of the M.I.T. Radioactivity Center and the Laboratory for Nuclear Science have told Professor Evans repeatedly: "You should have gotten two of these things."

currents of varying speed. As the only data available were Langley's it was thought best to begin at the beginning and test actual plane surfaces and not curved wings such as are used in aeroplanes. Professor Lanza described these experiments at an informal meeting of the New England Aero Club in April, 1910. . . ."

## 100 Years Ago

MESSRS. Jonathan and William G. Preston, Boston architects, were authorized by President William Barton Rogers to undertake preparations of plans for the Institute's first building, which was to be located at 491 Boylston Street, Boston.‡

It was estimated that the cost of the building "completed within and without; constructed of Brick with base of Granite or Red Sandstone; Sandstone facing and columns in front, and Sandstone capitals, trimmings, and Cornice all around" would be \$150,624.

‡The Prestons had been the architects for the adjacent building erected for the Museum of Natural History, which building still stands and is today occupied by the Bonwit Teller store.

# Feedback

## About Job Seeking

FROM WILLIAM HURST, '28:

I have read with interest your article on job placement at the Institute, particularly about the young doctor who made a research project of who he should interview among 20-odd firms, and reported back to friends, "This is fun." (Technology Review, April, 1963, p. 11.)

Personally I would not hire him to do menial work in this establishment; he is not that important. . . . We, as lads at the Institute, went to those interviews with a sense of deep humiliation, as this was our career and future being decided.

It is probably this aspect that could grace this young man's views. . . . I have seen many, and few nuggets are to be found.

*Petroleum Reservoir Engineer  
Houston 2, Texas*

## Favorable Impact

FROM WILLIAM L. PLANTE, JR.:

I am not given to writing such epistles, but I never pick up a copy of The Review that I don't tell myself I must drop you a line of appreciation.

The Review is one publication I take home with me. I intend, for example, to go over your April cover story with son David, 11, who would rather dissect a frog than play baseball.

Thomas K. Sherwood's piece on desalination of water fills an editorial writer's knowledge gap to a remarkable degree, and Thomas P. Pitre's article on foreign students is equally helpful.

But it is the fresh tone, excellent layout, and change of pace which create the total favorable impact for which you are to be commended.

*Editor, Daily News  
Newburyport, Mass.*

## Professor Cross's Class

FROM J. N. STEPHENSON, '09:

The article in The Review for May by Edgar Williams, '08, brings to mind an incident in Professor Cross's physics class. (His name was Charles, usually pronounced "Charlie.") The time was the last lecture before Christmas; the year probably 1907. At a prearranged signal just before the end of the period



**GEOGRAPHICAL distribution of M.I.T. Clubs in the United States shows 72 clubs and associate organizations located in 35 states and Washington, D.C.**

we shouted: "Merry Christmas, Charlie."

In his most dignified manner, but with a pleasant smile, he said: "Thank you, gentlemen. The class is dismissed."

*Pulp & Paper Magazine  
Gardenvale, Quebec*

## The Hobby Shop's Origin

FROM EDWIN S. BURDELL, '20:

I was challenged by the question, "Who started the Hobby Shop?" asked by Mr. Keyser in his article, "The Hobby Shop Is Growing, Too," in the May issue of The Review.

Like "Who killed cock robin?" Bush did suggest it to A. C. Watson, but I suggested it to Van! And who suggested it to me? That's the interesting part of the answer: my father, an elderly banker in Columbus, Ohio, who didn't know the difference between a drawknife and a chisel!

You will recall I came "back to Tech" in 1934, as professor of sociology. To keep me busy, Van, then Vice-president, thought up all kinds of "extra curricular" activities for me. And I thought up a few myself. One was a Museum Committee whose first exhibit was the collection of sailing prints and scrimshaw of a Boston banker. A. C. Watson was an instructor in the English and History Department under Henry Pearson and secretary of the Museum Committee, and later its Curator.

You will recall also that the charter of M.I.T. provided for a school of technology, a course of lectures in natural philosophy, and a science museum. The first two items were well

under way shortly after founding, but the museum idea apparently had never been taken seriously. With Van's backing, it took shape and we opened in 1936 or 1937.

But getting back to my father, William F. Burdell, he was an avid radio fan from the very first wet-cell and cat's-whisker sets. The Fisher Body Company was offering over the radio cash prizes to boys who submitted the best model coaches. Many of the winners used the prize money for tuition to engineering schools. My father's question was, "What happens to these dexterous youngsters when they find themselves in a college dormitory or boarding house (in those days) bereft of a workshop?" This was a challenge to me which I passed on to Van and to the Museum Committee, of which I was the first chairman.

*The Cranbrook Foundation  
Bloomfield Hills, Mich.*

## Second Decade Grinds

FROM EDWARD HURST, '13:

. . . in the May issue there is a grand article by Edgar I. Williams, '08. What was true of the first decade of the century about a Tech man being a grind was also true of the second decade, and since my class was 1913, I know whereof I write. However, between the first decade and the second, great pressure had been brought to bear to increase the necessity for being a grind. As a matter of fact, it was not optional but mandatory if one was not to be flunked out.

*Eagle's Nest Road  
South Duxbury, Mass.*

# Club News

## Women's Association Hears President Stratton

President Julius A. Stratton, '23, described the growth of the Institute at a dinner on April 1 of the M.I.T. Women's Association. He emphasized that the physical growth we constantly observe from the Charles should in no way obscure the continuing strides M.I.T. is making in academic areas. He explained the work of the Curriculum Committee and the enormity of problems encountered. Special guests included Dean and Mrs. Frederick G. Fassett, Jr., Dean and Mrs. Kenneth R. Wadleigh, '43, and sophomore, junior, and senior students.

There were two equally qualified candidates this year for the Junior Award for scholastic achievement, and \$75 was awarded to both Miss Jeanne L. Horwitz, '64, and Mrs. Lita L. Markley, '63.

A luncheon meeting, last February 9 in the Emma Rogers Room, was attended by 40 members and guests. Miss Marjorie Pierce, '22, described her trip to the Cotswald area of Britain and showed her excellent slides of the countryside.

The Association had a Christmas Sale on December 10 at the Bush Room. Chairmen Mrs. Frances E. Wypler, '39, and Mrs. Harold S. Wilkins, '31, and 50 Greater Boston area members exhibited gift tables and a well-stocked snack bar for guests. The funds raised by this activity, about \$400 this year, are used for loans and grants in the Student Aid program of the Women's Association.

The group held its first meeting last fall on November 6 at the Campus Room of the Graduate House. Professor Klaus Liepmann, Director of Music at the Institute, reviewed the progress of the humanities curriculum, and most of the members and guests accompanied him to Kresge Auditorium to hear a rehearsal of the M.I.T. orchestra conducted by John Corley.—Mrs. Mary Sullivan Nesbada, '45, Recording Secretary, 10 Blodgett Road, Lexington 73, Mass.

## Texas Alumni Topic Is M.I.T. Campus

The South Texas M.I.T. Club members and their wives enjoyed cocktails and dinner on March 26 at the Memorial Drive Country Club in Houston. Professor Robert R. Shrock, Head of the Department of Geology and Geophysics, described changes taking place in the Greater Boston sky line and more particularly on the M.I.T. campus. Professor Shrock also discussed the space and planetary science studies conducted at the Institute. A special welcome was given to those alumni attending from Beaumont and Freeport.—Edwin A. Reed, '45, Secretary, 6243 Briar Rose, Houston 27, Texas.

## Puget Sound Club Considers Humanities

The spring dinner meeting of the M.I.T. Club of Puget Sound was held on April 23 at the Seattle Tennis Club. More than 80 members, wives, and guests attended and heard John E. Burchard, '23, Dean of the School of Humanities and Social Science, describe this school. He noted, to almost everyone's surprise, that it was the third largest school at M.I.T. He further discussed the evolution, growth, range, variety, and scope of subjects in the humanities program. The enrollment in the various subjects is impressive. In the discussion period, Dean Burchard related some of his experiences in his travels through Asia.

Arnold G. Ganges, '46, Club President, acknowledged the attendance of Ben C. Mooers, '04, Floyd A. Naramore, '07, Richard G. Tyler, '10, and Harold E. Babbitt, '11. Phillip F. Frink, '31, and Phillip F. Frink, Jr., '60, father and son alumni, were also in attendance. Robert H. Dietz, '44, Dean of the School of Architecture at the University of Washington, was also introduced. It was at Professor Dietz's invitation that Dr. Burchard came to Seattle.—William J. Sullivan, Jr., '51, Secretary, 646 S.W. 145th Street, Seattle 66, Wash.

## New Jersey Club Elects Vaughan to Presidency

The M.I.T. Club of Northern New Jersey held its annual general dinner meeting and Ladies Night on May 9 at the Hotel Suburban, East Orange, N.J. Elected to office for 1963-1964 were: James L. Vaughan, '36, President; Roy Thorpe, '58, Vice-president; Carlo N. De Gennaro, '53, Vice-president for Programs; Roman N. Chapelsky, '53, Secretary; Joseph Wenick, '21, Treasurer; and Donald Peterson, '57, Harry Sherman, Jr., '47, and Charles King, '38, Board of Governors.

A feature of the meeting was an award to dual recipients, Sumner Hayward, '21, and Joseph Wenick, '21, for their contributions to the Club's objectives and its Alumni program, of handsome plaques appropriately engraved.

Robert H. Brill, Administrator, Scientific Research, Corning Museum of Glass, discussed "Archaeology and Ancient Glass." He is the author of several authoritative papers on the subject. Outgoing president, John M. D. Walch, '48, presided.—Carlo N. De Gennaro, Secretary, 905 Hudson Street, Hoboken, N.J.

## Connecticut Valley Topic Is History of Telstar

The M.I.T. Club of the Connecticut Valley held a dinner meeting on May 21 at Storowton Tavern, West Springfield, Mass. Bryce Blakely, an engineer with the computer engineering department of the New England Telephone and Telegraph Company and a graduate of Northeastern University, discussed the history of Telstar, the communications satellite, from its inception to the present.—Lloyd Gilson, '55, Secretary, 132 Chalmers Street, Springfield, Mass.

## Fairfield County Club Considers Common Market

The spring meeting of the M.I.T. Club of Fairfield County was held on April 25 at The Clam Box in Westport, Conn. Christopher G. Boland, '45, a security analyst, described "The American Investor in the Common Market."

Frederick G. Lehmann, '51, Secretary of the Alumni Association, spoke on the current activities and plans of the Association. Also at the head table were Clinton H. Springer, '45, Club President and master of ceremonies, and Mrs. Springer; Arthur J. Weinberger, '41, Vice-president; C. Philip Epifano, '39, Treasurer; and George A. Bradley, '52, Corresponding Secretary. Other Alumni attending were: Donald C. Bishop, '50, J. Barton Chapman, '35, Philip Coitt, '14, Laurence W. Day, '27, John H. Bech, '40, Robert E. Benedict, '44, Albert E. Bowen, Jr., '48, F. Eugene Davis, 4th, '55, James P. Eder, '34, Ross W. Emenager, '56, Wilfred L. Freyberger, '47, Leslie W. Gordon, '55, Leonard F. Glancy, '44, Paul H. Grady, '51, Michael Gross, '60, G. Winthrop Humphrey, '35, T. Stewart Harris, Jr., '40, Charles F. Healey, '37, Paul M. Heilman, 2d, '44, Emerson P. Hempstead, '34, Elmer W. Harmon, '30, John C. Kern, '50, Michael Kundrath, '31, Prentiss Lobdell, '33, David F. McGrath, '26, Willis D. Perkins, Jr., '48, Richard A. Rubino, '52, Stephen H. Shimberg, '60, Anthony R. Savina, '30, Harold M. Tepper, '52, Max L. Waterman, '13, Donald W. Waterman, '39, Richard F. Wiggins, '47, and Abraham I. Zimmer, '39.—Leonard F. Glancy, '44, Recording Secretary, 17 Woolsley Avenue, Trumbull, Conn.

## New Mexico Group Plans Weekend Trip

The M.I.T. Club of New Mexico planned a spring weekend on May 18-19 in Glenwood, N.M. Alfred M. Perkins, '23, was to display and talk about his wood carvings of military figures.

One Club member, David L. Hanson, '56, made the public prints recently by co-authoring a paper entitled "On the Isomorphism Problem for Bernoulli Schemes." His partner in this effort is J. R. Blum of the University of New Mexico. Dave is a staff member in the Mathematical Research Department of Sandia Corporation and the paper was published in the March issue of the *Bulletin of the American Mathematical Society*.—T. J. Raftery, '31, Secretary, 1505 Valencia Drive, N.E., Albuquerque, N.M.

## Japan Association Welcomes Scientists

Japan Alumni honored Professor and Mrs. Jerome B. Wiesner, and Harry C. Kelly, '36, at dinner on May 23. Dr. Wiesner discussed his role as science advisor to the President, and Dr. Kelly, chief American delegate to the U.S.-Japan Committee for Science Co-operation, reflected on his past three years in Japan.—Shikao Ikehara, '28, President, Tokyo Institute of Technology, Oh-Okayama, Meguro-Ku, Japan.



## **Boston Area Clubs Discuss Business Ethics**

The M.I.T. Clubs of Boston and Route 128 met jointly on May 9 at the Charterhouse Hotel in Cambridge to consider ethics and morality in modern business and government. The electrical industry price-fixing trials, the conflict-of-interest accusations, and the recent Boston Common garage trial provided discussion topics for the panel including: Louis Cabot, Cabot Corporation President; Charles F. Mahoney, special judge, the Municipal Court of Boston, and former Commissioner of Administration under Governor Furcolo; Reverend Alexander Stewart, minister and Harvard Business School graduate; and moderator, Huston C. Smith, Professor of Philosophy at M.I.T.

Route 128 officers elected for 1963-1964 are: Jay Zeamer, Jr., '40, President; Joseph A. Vitka, Jr., '49, Vice-president, Membership; Robert M. Alfred, '41, Vice-president, Programs; Rodman F. Flinchbaugh, '42, Treasurer; Robert E. Anslow, '54, Secretary; and Board of Governors, George S. Burr, '41, John L. Danforth, '40, James W. Davidson, '52, Bernard M. Gordon, '48, Allan Q. Mowatt, '35, William M. Pease, '42, and Louis Rosenblum, '42.—Warren W. Heimback, '58, Secretary, M.I.T. Club of Boston, 120 Sylvan Street, Danvers; Robert E. Anslow, '54, Secretary, Route 128 Club of M.I.T., 32 Woodland Road, Lexington, Mass.

## **Long Island Alumni Hear NASA Expert**

The M.I.T. Alumni of Long Island held its annual dinner on May 24. Kurt Stehling, rocket scientist from the Office of Plans and Program Evaluation at NASA, discussed the "Prospect for the Space Age." John Stack, '28, Vice-president and Director of Engineering at Republic Aviation Corporation, was toastmaster. A cocktail hour was sponsored by Grumman Aircraft, Kollsman Instruments, Sperry Gyroscope Company, and Republic Aviation. Chairmen were Duane Yorke, '54, and Myron A. Cantor, '39.

Rodolfo S. Agullo, '60, is a new member of the Board of Directors.

Club members and their wives are to conclude the year on June 15 with a boat trip around Manhattan Island.—Jimmie Chin, '56, Secretary, 67-15 152nd Street, Flushing, N.Y.

## **Delaware Valley Club Visits Winterthur Museum**

The M.I.T. Club of the Delaware Valley held its spring dinner meeting on May 18 at the Wilmington Country Club. During the afternoon many of the 124 club members and guests visited the gardens and 26 rooms of the Winterthur Museum.

Harold E. Edgerton, '27, Professor of Electrical Measurements, explained strobe lighting and high speed photography. He stated his intention to speak directly to the ladies, and then proceeded to keep their interest as well as the interest of those more technically trained.—John B. Murdock, Secretary, 15 Runnemeade Avenue, Landsdowne, Pa.

## **Paul M. Robinson, Jr., '24, Heads Washington Club; Melvin F. Levine, '56, Discusses Planning in Capital**

Fifty-six Alumni and guests attended the last dinner meeting for this year of the M.I.T. Club of Washington on April 25 at the Cosmos Club. Melvin F. Levine, '56, spoke on "City Planning and Urban Renewal in the Nation's Capital." Mel is chief planner for Downtown Progress, a private planning group sponsored by the local business community. He was introduced by Thornton W. Owen, '26, Chairman of the Board of Perpetual Building Association and a member of the Executive Committee of Downtown Progress. Before coming to Washington, he was in charge of the development of a general plan for the central business district of Boston. He holds an M.I.T. city planning degree and is now teaching at George Washington University. He showed colored slides of the deteriorated conditions along portions of Pennsylvania Avenue between the White House and the Capitol, explained the mechanics of attracting private capital into a business area, and cited progress which has been made by the Action Plan for Downtown committee by the construction of stores, office buildings, and apartments.

The Executive Committee—headed by Sterling H. Iverson, Jr., '41, Club President—met on April 11 and elected the following for 1963-1964: Paul M. Robinson, Jr., '24, President; Gilbert H. Lewis,

'51, 1st Vice-president; Sylvia Waller, '47, 2nd Vice-president and Treasurer; Richard R. Martin, '45, Secretary; and Members at Large, Sterling H. Iverson, Jr., '41, Ernest W. Reisner, '30, Robert W. Blake, '41, Nicholas P. Stathis, '29, Merlyn J. Block, '41, Donald A. Christensen, '52, Lieutenant Colonel James R. Cumberpatch, '60, Priscilla A. Gardner, '59, William C. Howlett, '49, Michael K. Johns, '53, Dr. Frank G. Kear, '27, John J. Phillips, '38, and Selden Saunders, '57. Outgoing President Iverson was presented an engraved gavel from the Club.

Other election news: A "dark horse" candidate, William C. Howlett, '49, President of the Union Iron Works in Arlington, Va., was nominated on May 7 by a district Republican convention to fill a seat on the seven-member Fairfax County Board of Supervisors. The Board has attracted national attention with its controversial rezoning of the Merrywood Estate which would permit high-rise apartments on the Potomac Palisades.

We were saddened to learn of the death of Maude E. Gardner, '33, in March. She was an aeronautical engineer for the Bureau of Naval Weapons and had been in ill health.—Paul M. Robinson, Jr., '24, President, 8009 Jansen Drive, Springfield, Va.; Richard R. Martin, '45, Secretary, 9308 Milroy Place, Bethesda, Md.

## **Central Massachusetts Club Enjoys the Boston Pops**

Thirty-five members, wives, and guests of the M.I.T. Club of Central Massachusetts met on May 5 for a Ladies Night dinner—the last club event for the year—at Ken's Steak House. They then motored to Symphony Hall in Boston where they enjoyed the "M.I.T. Night at the Pops."

Club officers elected for the 1963-1964 year are: Harry B. Duane, 3d, '57, President; Charles Burnham, '43, and Jack T. Wilber, '38, Vice-presidents; James E. Haggett, '47, Treasurer; Arnold A. Kramer, '52, Secretary; and John P. Leahy, '59, Assistant Secretary.—Arnold A. Kramer, '52, Secretary, 88 Longfellow Road, Worcester 2, Mass.

## **Hartford Club Re-Elects Roth to Presidency**

Nathaniel H. Frank, '23, Professor of Physics, explained new techniques in grade and secondary school-level physics to M.I.T. Club of Hartford members on May 8 at the Shoreham Oaks in Hartford. He illustrated his talk with motion pictures. Arthur K. Deming, '35, was chairman of reservations.

Re-elected to office for the coming year were: Wilfred Roth, '48, President; Theodore A. Earl, '35, Vice-president; William A. Bayer, '58, Secretary; and Arthur K. Deming, '35, Treasurer.—William A. Bayer, '58, Secretary, 422 Farmington Avenue, Hartford 5, Conn.

## **Lower Ontario Alumni Honor Robert H. Winters**

The M.I.T. Club of Lower Ontario met at dinner on April 23 to honor Robert H. Winters, '33, President-elect of the M.I.T. Alumni Association. Forty Alumni and their wives heard Bob talk about things going on at Tech. The scale of operations and the outstanding personalities involved made us proud of our Association.

Newly elected club officers were: Edward M. Peacock, '47, President; Maxwell C. Coutts, '39, Vice-president; Michael M. Koerner, '49, Secretary; and Ian R. Lounsbury, '48, Treasurer. The Club plans to hold three meetings next year.—Michael M. Koerner, '49, Secretary, 14 Ridgfield Road, Toronto, Ont.

## **Mexican Fiesta Host, Agustin M. Valdes, Dies**

Agustin M. Valdes, '25, known as "Gus" by many M.I.T. associates, died of a heart ailment last January 29 in Mexico City. He was born in 1901, and received degrees at M.I.T. and the National University of Mexico, where he was a professor of mathematics for nine years. He was an energetic member of the reorganized [1948] M.I.T. Club of Mexico, and his home was the center for many Alumni reunions and social gatherings. Many visitors to Mexico City have enjoyed the hospitality that he and his wife, Olga, extended—particularly during the traditional "M.I.T. Club of Mexico Annual Fiestas."

## Class News

### '95

At our annual meeting held June 10 after the Alumni Day luncheon, the subject of scholarships from the income of the \$25,000-fund established at our 50th Reunion in 1945 was discussed. The records show that no applications have ever been received by M.I.T. for the funds. The Institute applies the yearly interest to the M.I.T. Loan Fund to help student applicants. The total income at present amounts to about \$19,000, so our gift has done good service. A suggestion was made that when scholarships do not equal the year's income the balance be paid as a "reward of merit" to students with a year's record above the passing requirement of P's for each C or H on his or her record. This might result in greater knowledge of their subjects. Have you any suggestions for use of the yearly income?—**Andrew D. Fuller**, Secretary, 120 Tremont Street, Boston, Mass.

### '96

On a pleasant Saturday in May the Compton Cup was won by Harvard, defeating Tech by one foot; Princeton and Dartmouth trailed on the mile and three-quarters upstream course that ended at the Tech boat-house on the Charles River. The presence of the secretary viewing the race from an auto drawn up on the grass may have been a bit anachronistic to the strolling students and coeds, one barefoot, along the shore. . . . **Ralph Henry** recently reminisced over the phone in lieu of promised letter; he had heard from **Bakenhus** and thought some word from the Admiral would be interesting. I agreed with him and assured him it would be appreciated and printed in the notes. **Myron Pierce** is back from Florida; he took the secretary to lunch in the old Bellevue Hotel across the street from the State House where Myron served in the legislature many years ago.

At the Alumni Council meeting in April, '95 and '96 members sat together; Andy Fuller, '95, told about a large estate he constructed in Maine; '96 came into the story in the person of the architect **Bert Spahr**. They had met recently at a fraternity reunion, and Spahr was able to get around in spite of the hip he had broken three years ago. The May issue of *The Review* gave little help to our class notes, so some word from members of the class is most necessary if we are to maintain our place in *The Review*.—**James M. Driscoll**, Secretary, 129 Walnut Street, Brookline, Mass.; **Henry R. Hedge**, Assistant Secretary, 105 Rockwood Street, Brookline, Mass.

## Senior Executive Alumni Promoted in Industry

**James H. Ake**, Fall '59, has been elected Assistant Comptroller of the Goodyear Tire and Rubber Company in Akron, Ohio. . . . **James W. Milne**, Fall '59, is now Vice-president of Personnel for Abbot Laboratories in North Chicago, Ill. . . . **Ellis J. Premo**, Fall '59, is now Chief Engineer of Chevrolet Engineering Center in Warren, Mich. . . . **Richard M. Osgood**, Fall '59, has recently been named General Manager of Data Systems Operations, which is a consolidated organization of Waltham Laboratories and a sister facility at Needham, Mass. . . . **Robert C. Schmidt**, Fall '59, was recently appointed Vice-president in charge of Manufacturing at Co-polymer Rubber and Chemical Corporation in Baton Rouge, La. . . . **Robert C. Simmers**, Fall '59, is Manager of Manufacturing Switchgear Division at Westinghouse Electric Corporation in East Pittsburgh, Pa.

### '97

Dear Antiquarians of '97. Your excessive modesty or perhaps lassitude, makes it very difficult to get any material for this column, excepting obituaries from sons and daughters and the less of those the better (obituaries, that is). This leaves it my duty to manufacture news, when needed, or rely on my memories of you classmates, to report what you have done in your 66 years since graduation. My list is rather incomplete but perhaps it can be bettered. If you do not want manufactured news, better get in some actual happenings. The Review erred in stating that "**Bradley**" was our only representative last June of 1962. Our only representative was **Will Binley**, to whom we owe much gratitude for representing us on our 65th. Your acting secretary was one of the fortunate ones invited to dinner on May 7 to honor Alfred P. Sloan, Jr., '95, and the more-than successful Second Century Fund, which ran well over the \$66 million goal. It was an inspiring gathering and no other '97ers were present though they might have been missed among the 1,100 people present. **Ed Hawkins** son, Dick, '27, was at the meeting, and it was good to hear from Ed so directly; he is well though handicapped in getting about. Probably pretty true for all of us.—**George R. Wadleigh**, Acting Secretary, 70 Flower Avenue, Hastings-on-Hudson, N.Y.

### '00

**Walter U. Jennings** of East Aurora, N.Y., who was with our class in the civil engineering course for two years, died in his home on April 12, 1963. He had spent most of his life with Elbert Hubbard and the Roycrofters. Born December 13, 1878, and raised on a farm in Weston, Mass., after the two years at M.I.T., he began employment in the textile industry in Boston, then Woonsocket, R.I., and

## Sloan Fellows

**Raymond F. Winch**, '59, who is with the Sun Oil Company, has recently been appointed manager of New Product Development within the Commercial Development. . . . **Richard A. Long**, '62, of the Southwestern Bell Telephone Company is now the Division Accounting Manager of that company.—**Peter P. Gil**, Secretary, Room 52-455, M.I.T., Cambridge 39, Mass.

Troy, N.Y. In 1906 he ran across a copy of "The Philistine," one of Elbert Hubbard's monthly magazines, and was so fascinated by Hubbard's philosophy that in 1908 he moved to East Aurora and worked in the bindery and later the copper and silver designing shops of the Roycrofters. At intervals he worked elsewhere at copper and silver work, and after 1933 he left the Roycrofters and worked in his own shop. During World War II he worked for a time for the Curtis-Wright Corporation in Buffalo and after March, 1941, with the Works Progress Administration on a special project making copper Indian masks for exhibit in Washington, D.C. After several years at Curtis-Wright he returned to jewelry making at home and selling in his own antique and gift shop. He remained active until his death. Walter was a member of St. Matthias Church, a 32nd degree Mason and a member of the Boston Society of Arts and Crafts. In 1925 he was awarded the rating of master craftsman. Besides his wife, Margie Crumrine Jennings, he is survived by a son, Rexford, four daughters, Mrs. Fred Cross, Mrs. Willard Kolb, Mrs. Earl Kill and Mrs. Bernard Ellis, all of East Aurora, N.Y., a sister, Mrs. Willard Harding of Wellesley and seven grandchildren. Walter's cousin, **Levi B. Jennings** of Weston is also a member of our class.

**Warren A. Edson**, I, died at St. Petersburg, Fla., May 10, 1963. He had been ailing for some time, and we only recently learned that he was in a nursing home in St. Petersburg. After graduating from M.I.T. in 1900, he was successively a draftsman with Crosby Steam Gage Company; superintendent of the Surgical Appliance Shop at Children's Hospital; testing engineer with American Steel and Wire Company at Worcester; and engineer and assistant superintendent with Parsons Manufacturing Company, Elizabeth, N.J. In 1911 he became deputy smoke inspector for the Commonwealth of Massachusetts and in 1915 was appointed chief smoke inspector, which position he held until his retirement in 1948. After retirement he spent much of his time in St. Petersburg. His wife died in 1944 and he had no children. His funeral was held in Wellesley, Mass. on May 14. Your Secretary represented the class.—**Elbert G. Allen**, Secretary, 11 Richfield Road, West Newton 65, Mass.



These are the last class notes until next November and are being written the first of May. The last questionnaire is an effort by some of the officers to put over the planned reunion. Personally, I do not believe that enough members will want it. I shall not be able to come. Eleven members have replied to the Class Letter. . . . I cannot find that I have reported the death of **William Whipple** who taught in a university in Louisiana. He died on September 29, 1962. A letter from **Allen McDaniel, IV**, from Washington, D.C., says that the last year has been spent by himself and wife with doctors, dentists and hospitals. They are planning a tour of the Southwest and hope to find "a haven in the sun." He hoped to be at the reunion. . . . **Anthony Peters, I**, from Westwood could not come to a reunion. He has trouble with his eyesight.—**Theodore H. Taft**, Secretary, Box 124, Jaffrey, N.H.

Word has been received from the Alumni Office of the death on March 7, 1963, of **Gilbert Townsend, IV**. At the time of his death he was a resident of Montreal where he was associated as consultant with the firm of Ross, Fish, and Duchenes, Architects and Engineers. Townsend was born March 20, 1880, in Newton, Mass., and prepared for M.I.T. at the Newton High. He pursued the usual four year course in architecture at the Institute and then remained a year as a graduate student. After several years

experience with engineering and architectural firms in Chicago and New York, he became associated in 1909, with the Montreal architectural firm of Ross and MacFarlane. Townsend remained with this firm through its progressive changes (so characteristic of law and architectural firms) becoming a member, and upon his retirement was retained as consultant to the present day firm, Ross, Fish, and Duchenes. Your secretary wishes you all a pleasant summer.—**Burton G. Philbrick**, Secretary, 18 Ocean Avenue, Salem, Mass.

The Alumni Office reports the death of **Charles R. Cary** at Philadelphia on February 24. No details were given. . . . Since there are no other items of news on our desk we wish you individually and collectively a pleasant summer with the usual suggestion that you drop us a card or letter to let us know what you have been doing.—**Carle R. Hayward**, Secretary, M.I.T., Room 35-304, M.I.T., Cambridge, Mass.; **Eugene H. Russell Jr.**, Treasurer, 82 Devonshire Street, Boston, Mass.

Some years ago while my men were making alterations for a firm of consulting engineers in Boston, **Sam Ware, XIII**, was there too. At the April, Alumni Council meeting a member of that firm, **Herbert Cleverdon, '10**, told me he had

visited Sam and his wife shortly before and found them, as Sam expressed it in a note to me before our 55th, "still hanging on with reasonably good health." Sam is a trustee of the local hospital and daughter Martha is still, I believe, the only woman judge in the Old Bay State. . . . A welcome letter from **Abe Sherman, VI**, told of their return to Rochester early in April after their usual three months in Florida out on Longboat Key. He lamented the devastation caused by the freeze and the cold and mean weather in January and February. He and Sadie had visited **Cy Young, VI**, who was staying at Warm Mineral Springs, about 50 miles south of Sarasota, and found that Cy's eyesight had failed quite badly but otherwise "he seems to be about like the rest of us, and we spent a very pleasant day there." While **Elsie** and **George Guernsey, I**, were in Bradenton following a stay at Boynton Beach, they visited the Shermans. Abe ended with some disappointing news: "we won't make it to the reunion (AD) this year" and they have been so regular through the years!

Along in May came some news from the northwest. **Fay Libbey, III**, sent a pat-on-the-back and continued: "I talk to **Bob Cushman** on the phone occasionally and two weeks ago I was with **Henry Mears, III**, at an ASME regional conference here. One session explored 'Gold and Money' and some VIP's discussed the subject from both a national and international point of view. They were rather critical of our money managers and suggested that we are skating on thin ice. However, they were not agreed on what to do about gold. Henry and I, being old miners, were unanimous on what ought to be done," meaning, I suppose, go back on the gold standard. Fay

## Happy Birthday

Congratulations are in order during July, August and September for 3 Alumni who will celebrate 95th birthdays; and to 12, 22 and 47 Alumni who will turn, respectively, 90, 85 and 80, as listed below with the dates of birth:

July, 1868—**BERTHA I. BARKER, '07**, on the 28th.

August, 1868—**FRANCIS B. CHOATE, '91**, on the 28th.

September, 1868—**JOHN L. DAMON, '91**, on the 28th.

July, 1873—**PROCTOR L. DOUGHERTY, '97**, and **LOUIS N. GOWELL, '00**, on the 9th; and **Mrs. L. B. LAWRENCE, '01**, on the 28th.

August, 1873—**JAY E. TONE, '97**, on the 7th; **GUY L. MORRILL, '96**, and **WALTER H. JAMES, '96**, on the 26th.

September, 1873—**PAULINE M. ATKINS, '01**, on the 2nd; **R. E. BAKENHUS, '96**, on the 10th; **FRED D. FITCH, '97**, on the 18th; **CHARLES P. MOAT, '96**, on the 20th; **FRANK E. GUPTILL, '96**, on the 22nd; and **CHARLES L. HAMMOND, '97**, on the 24th.

July, 1878—**FRANK E. BURNHAM, '00**, and **HENRY N. HUDSON, '02**, on the 2nd; **ROLAND E. SIMONDS, '01**, on the 4th; **WILLIAM E. FARNHAM, '01**, on the 5th;

**LEONARD S. FLORSHEIM, '01**, on the 12th; **HORACE S. BAKER, '03**, on the 18th; **SAMUEL B. ROBERTSON, '99**, on the 21st; **THOMAS J. O'HANLON, '01**, on the 28th; and **HARRY T. SHAPLEY, '00**, on the 29th.

August, 1878—**WILLIAM H. FULTON, '00**, and **FRED L. TOWNLEY, '00**, on the 5th; **ALONZO K. ISHAM, '01**, on the 11th; **W. FRED DAVIDSON, '01**, on the 14th; **L. HERBERT BIGELOW, '01**, on the 16th; and **J. WALTER ALLEN, '99**, on the 19th.

September, 1878—**WILLIAM G. HOLFORD, '01**, on the 7th; **CHARLES H. HICKEY, '02**, on the 8th; **ALBERT C. BLAISDELL, '04**, on the 9th; **EVERETT H. PENDLETON, '01**, on the 15th; **ANDREW KERR, '06**, and **JOHN A. ROSS, JR., '01**, on the 19th; **JULIUS ALSBERG, '02**, on the 30th.

July, 1883—**SAMUEL H. SALISBURY, JR., '08**, on the 6th; **GEORGE W. OTIS, '07**, on the 7th; **CLARENCE H. SPIEHLER, '08**, on the 12th; **EDWARD T. STEEL, '05**, on the 17th; **JOHN H. FLYNN, '05**, on the 19th; **EARL C. WEAVER, '05**, on the 20th; **MRS. FRANCES R. WILLIAMS, '04**, on the 23rd; **RALPH F. KNIGHT, '07**, on the 25th; **JOHN R. SANBORN, '04**, on the 26th; **SHIELDS BURR, '06**, on the 29th; **SUMNER S. PECK, '07**, on the 30th; and **ROGER L. RICE, '08**, on the 31st.

August, 1883—**CHARLES T. O'CONNOR, '06**, on the 1st; **HOWARD S. CONGDON, '09**, on the 2nd; **GEORGE W. PERRY, '05**, on the 3rd; **JAMES W. KELLOGG, '10**, on the 5th; **PAUL W. NORTON, '08**, on the 11th; **CLARENCE B. WILLIAMS, '04**, on the 12th; **DANIEL F. COMSTOCK, '04**, on the 14th; **LOUIS P. D'AUTREMONT, '10**, on the 23rd; **HERBERT A. SULLWOLD, '07**, on the 24th; and **ARTHUR T. TROWBRIDGE, '06**, on the 28th.

September, 1883—**EDWARD C. STORY, '07**, on the 1st; **FRANKLIN L. HUNG, '09**, and **ANDREW B. SHERMAN, '06**, on the 3rd; **WALTER B. SANBORN, '06**, on the 5th; **EDGAR D. STEINHARTER, '06**, and **WILLIS G. WALDO, '07**, on the 8th; **WILLIAM H. BRADSHAW, '07**, **ANDREW FISHER, '05**, and **MAURICE H. PEASE, '07**, on the 10th; **CARROLL A. FARWELL, '06**, on the 13th; **ROBERT C. ALBRO, '07**, on the 14th; **MICHAEL J. GIBBONS, '06**, **MYRON E. HELPERN, '05**, and **JAMES B. PACKARD, '07**, on the 15th; **KENNETH H. DISQUE, '06**, and **CARLETON M. EMERSON, '06**, on the 18th; **ARTHUR R. CHAMPAGNE, '12**, on the 21st; **WALTER D. DAVOL, '06**, and **SISTER MILDRED ELEANOR, '06**, on the 24th; **EARL H. BARBER, '10**, on the 27th; **MRS. FERRUCCIO VITALE, '03**, on the 28th; **ALVIN F. MENKE, '09**, and **OLIVER STEVENS, '10**, on the 29th; and **ROBERT T. POLLOCK, '08**, on the 30th.



said that he hears from **Guy Ruggles**, III, now and then and so do I; for on April 24 he followed up my comments on attendance at M.I.T. Club meeting by telling, for contrast, about the meetings at the Arizona Country Club of the Arizona Section of the American Institute of Mining, Metallurgical, and Petroleum Engineers. Guy is chairman of the membership committee of its Maricopa subsection. They meet monthly, have a social hour (free), dinner at \$3.50 and a speaker. Meeting in the evening, the average attendance is 50, with a mailing list of 350, or about 15 per cent attendance. As Guy points out, "you can see what draws the crowd." Does Guy get around! A few days later he planned to drive to Tucson for a technical session of the Ore Dressing Division of the Arizona Section, at the Duval Sulphur and Potash Company. They expected between 75 and 100 for luncheon, a trip through the concentrator, a cocktail party, and dinner. Guy may not get East this year, although he expects to attend our 60th. . . . **Jack Norton**, V, allows that he and Margaret "had a cold winter (for Tryon), a late spring and now a lot of August weather. We stayed right here—no Florida trip—and I think we were more comfortable right here in North Carolina. We leave for New Hampshire early in June but driving the 1,100 miles is getting harder to take each year."

A nephew of **Joe Santry**, VI, Arthur J. Santry, Jr., was elected president of Combustion Engineering in April, succeeding H. G. Ebdon who became vice-chairman of the board. Joe will always be the Chairman of the Board, I suspect. . . . On May 14 as I was preparing these notes, I received a letter from West Hartford from R. M. Feingold, '43, who is secretary-treasurer of his class, enclosing a clipping from the Hartford Times that was indeed a shock. **Phil Stanley** suffered a fatal heart attack on May 11 while driving with his wife in Hartford. The next day came a letter from **Ern Smith**, II, from his Wildbore Farm in Old Chatham, N.Y., enclosing a clipping from the Hartford Courant, and said: "have just returned from New Britain after attending Phil Stanley's funeral Monday. Phil was so widely known and so well liked that the shock to all in the New Britain and Hartford areas is just indescribable. I was confined in the N. B. General Hospital from December 10 to January 9 and Phil used to drop in nearly every other day. Having known him since September 1902, as an especially fine loyal friend, his passing so unexpectedly still leaves me numb. I tried to see **Max Coe** but he was not at home."

**Philip Bartholomew Stanley**, II, Phi Beta Epsilon, was born in Granby, Conn., on January 18, 1883, but he prepared at New Britain High, and except for a year as an apprentice at Westinghouse in Pittsburgh, New Britain has been his home address ever since. Phil was active and prominent during our four years, rooming at 237 Beacon Street, being president of the Tennis Association 1904-1905; assistant business manager of Technique Board; on Class Day Committee; member of M. E. Society, Walker

Club, Civic Club and Osiris. His thesis was "A Study of the Coefficient of Friction of Ball and Roller Bearings." Phil was, as Ern expressed it, "an especially fine loyal friend," not only to those he knew but all through the years to our class and to the Institute. He attended our 15th Reunion in Waterford at the Oswegatchie Inn, the 20th at Boxwood Manor in Old Lyme, and planned to be with us at the 50th but wrote me shortly before, that an unanticipated matter would prevent coming. However, he was able to drive up that Sunday, attended the Osiris dinner that evening at the BraeBurn Country Club, and the Alumni Day doings. In a note to Jim he said: "It was a great pleasure to see so many old friends at the festivities on Monday."

Philip Stanley joined Stanley Rule and Level Company in 1907, was superintendent of the Canadian Plant in 1908-1909, and in 1910 became assistant to the president, later a vice-president and director, also by 1930 a vice-president of the Stanley Securities Company and its president by 1955. His civic and business activities were many: President of the Alix W. Stanley Charitable Foundation; incorporator and director for 42 years of the N.B. General Hospital; its president 1943 to 1949 and in 1958 named director emeritus; former president of Newington Hospital for Crippled Children; director of N.B. YMCA and Community Chest; first honorary member of the N.B. Historical Society. Phil was a member of the State Investment Committee and a director of N.B. Trust Company, N.B. Machine Company, Connecticut Mutual Life and the Phoenix Life Insurance Companies; also a member of the N.B. Club, and the Shuttle Meadow and Fisher's Island Clubs. Besides his wife, Helen Hooker (Talcott) whom he married in 1911, he leaves a son, Talcott of West Hartford, a daughter, Mrs. John D. Stout, Jr., of Bloomfield, a brother, Maurice of New Britain, and seven grandchildren. The sympathy of the class and of all who knew him goes out to Mrs. Stanley and the family. . . . But we must carry on and plan ahead. Alumni Day is coming up as I write and past history as you read. The mention of that check received for class dues resulted in two more. Thanks men.—**Edward B. Rowe**, Secretary-Treasurer, 11 Cushing Road, Wellesley Hills 81, Mass.

# '07

Usually the '07 men around Boston have gotten together in late April for a spring dinner meeting at the Faculty Club. **Don Robbins** instructed your secretary to plan for such a meeting; but about that time the Class Secretary found himself in Memorial Hospital in Worcester, wondering how his heart got "out of rhythm." The heart in question, having run three-quarters of a century at a perfectly normal and correct rate, decided independently of its owner to run on double time—evidently trying to provide the zest and joy of youth again. After a week of trying various colored pills and

having many cardiograms, blood pressure tests, and pulse reactions, I was told to go home and "have a good time" but not to overdo it. So I am back on the job again but find I cannot write Class News without something besides myself to write about.

A note from **Wheaton I. Griffin**, I, advised me that he was at home after a three-month siege in the hospital. During this time, Mrs. Griffin found a more suitable apartment on the same street and had it ready for occupancy when he returned home. Please note the new address on your class list: 2609 Genesee Street, Utica 3, N.Y. . . . Barrington, R.I., is a beautiful residential town nine miles southeast of the R.I. state capitol in Providence. Here our President, Don Robbins, has a lovely home just off the main highway, in the center of the town. Barrington is also the home of Barrington College, located on a 110-acre tract on Primrose Hill. This doubly accredited college is co-educational, with a student body of more than 400 students from 25 states and 12 foreign countries. It has a three-fold program of liberal arts, Bible studies, and church vocations. For the past 28 years, your Secretary has been actively connected with the college as a trustee, three years of this period serving as chairman of the board, and also for many years as chairman of its Building Committee. The present campus was purchased in 1950 by means of the "Miracle Dollar"; and the Building Committee went to work altering various existing buildings to serve as a music building, athletic house, classrooms and library. Then in 1960, a new one-story girls' dormitory, housing 162 students, was constructed. Early in May of this year, a new dining hall and snack bar, seating over 250 and serving on the cafeteria plan, was dedicated. In June, ground will be broken for a three-story dormitory to house 180 students and be available for occupancy by January of 1964. In appreciation of the efforts that your '07 Secretary has put into these building projects, the main thoroughfare through the campus has been named "Walker Drive." Recently, Mr. and Mrs. Walker had a two-faced clock installed in the tower of Woodward Hall in memory of their son, John Ballantyne Walker, II, who died in 1934 as a result of a coasting accident.—**Philip B. Walker**, Secretary and Treasurer, 18 Summit Street, Whitinsville, Mass.—**Gardner S. Gould**, Assistant Secretary, 409 Highland Street, Newtonville, Mass.

# '08

The second dinner-meeting of the class of the 1962-1963 season was held at the M.I.T. Faculty Club, Cambridge, Mass., on Wednesday, May 8 at 6 P.M. Bunny and Mrs. Ames, Bill Booth, Nick Carter and Paul and Mrs. Norton showed up so we had a quorum. The **Wattles** had planned to come as they returned from Florida on May 4, but a day or so later they both came down with bad colds. The Sewells had sent in an O.K. card, but

Mrs. Sewell had the misfortune to fall, breaking her arm and cracking some ribs and wound up in the Deaconess Hospital. We gathered in the cocktail lounge as usual and were able to capture a table, which is hard to do on a Wednesday night. We talked over the doings of the winter while enjoying our favorite tonics and the excellent cheese and crackers from the club buffet. About 6:30 P.M. we adjourned to Private Dining Room 4 and were served the foods of our choice. We missed the raw oysters. With no Wattles, no pictures, so we called it a day early.

Several of our classmates were guests at the S.C.F. dinner in New York on May 7. Jimmie Burch, Leo Loeb, Edgar Williams, Harold Osborne, Willard Rockwell were a few of those attending. That the drive for funds was successful is shown by the \$98 million given as against the \$66 million asked. . . . **Jimmie** and **Marie Burch** celebrated their 50th anniversary on May 17. Their oldest granddaughter graduated from the State University on June 7 and has been accepted by the Peace Corps and hopes for assignment to South America. Wishing you all a most happy summer.—**H. Leston Carter**, Secretary, 14 Roslyn Road, Waban 68, Mass.; **Joseph W. Wattles, 3d**, Treasurer, 26 Bullard Road, Weston 93, Mass.

## '09

In the June class notes it was requested that, in memory of **John Willard**, donations be made to the '09 Alumni Fund. At the time of sending the copy of these notes to the Alumni Office (May 13) there were 22 contributions including that from the class, a total of \$243. However, aside from those who happened to see the newspaper notices, many Alumni will not know of the request until they receive this number of *The Review* and undoubtedly further donations will follow. . . . In these notes for the past few months we have attempted to keep the class informed of the progress of the 55th Reunion Committee. However, there are more than six weeks from the time that the copy is sent to the Alumni Office to the time that *The Review* is distributed, so that there is much lag in the news. The members of the committee are still making inquiries as to the relative merits of the several meeting places under consideration and have had many informal discussions. It is most desirable that **Molly, XI**, who is in New York, should meet with the committee and contribute his suggestions. He comes to Boston quite frequently and we are timing our next meeting to coincide with one of his trips. It would not be expected that **Harry Whitaker, VI**, a member of the committee who lives in Sea Girt, N.J., would be able to attend our meetings but nevertheless before our meetings he calls the secretary long distance asking for information and expresses his views. By the time these notes reach the class the reunion meeting place undoubtedly will have already been decided. . . . An-

other alumni year has come to a close and there will be no more notes until November. The class officers wish everyone a pleasant summer.—**Chester L. Dawes**, Secretary, Pierce Hall, Harvard University, Cambridge 38, Mass.; Assistant Secretaries: **George E. Wallis**, Wenhams, Mass.; **Francis M. Loud**, 351 Commercial Street, Weymouth 88, Mass.

## '10

During the past month we have suffered the loss of two of our classmates, **Harold D. Billings** on April 18, and **Van Court Warren** on April 14. Hal Billings, we all remember as an intensely loyal alumnus and as a well known building contractor. He was president of the Tredennick-Billings Company and was responsible for the construction of many large buildings in New England. It was my privilege to have many contracts with his firm with most pleasant relations. **Hal Manson**, **Russell Hastings** and I attended the services at the Newton Cemetery Chapel. . . . Information regarding Van Court Warren's death came to me from Donald G. Robbins, '07, who had received the information by letter. Van had retired as a colonel from U.S. Army service. The Army had been his career since he had received a lieutenant's commission in August, 1918. . . . I attended the dinner given in honor of Alfred P. Sloan, Jr., at the Waldorf Astoria Hotel on May 7. Other members of the class attending were **Fred Dewey** and **Hiram Beebe**. Fred looked very well and claimed his health was due to his desire to keep on the job. Hiram had come east from California to attend the banquet and to visit his son living in Vermont.—**Herbert S. Cleverdon**, Secretary, 120 Tremont Street, Boston, Mass.

## '12

**Randall Cremer** is back in the U.S.A. As the North Country Cousin Jacks would say, we thought he had become a "bloody foreigner." As he has not been in the 1912 Class News for a long time, we will bring you up to date by quoting from his fine letter, dated April 16, from New York. "Dear Johnny. It was good to get your card—what memories of long ago! I'm afraid my news will be pretty stale to you and the boys. You have all had more adventures than I have, and without doubt have more to show for it. I hated to miss the reunion, but there seemed to be no hope for it. We were in the midst of remodeling an old Spanish house on Mallorca, and I tremble to think of what would have happened to it had we dropped everything and left. Our ideas of houses are so different from the Spaniards'; it was impossible to predict what would have happened.

"As it was, things turned out wonderfully, and I was the only loser. Some day we hope to have you all over there just to relax looking at the Mediterranean. It is a wonderful site and a wonderful sight

too—it is the first time we have ever had just what we wanted. Right now the only inmates are two servants and two cats. The little poodle is farmed out in a nearby kennel. . . . Things sometimes happen when you least expect them. Here I am resuming the duties from which I had retired just six years ago. It was something to decide but here we are, having a wonderful time, but hoping to get back to Mallorca every year for perhaps a month. The place is having such a boom as can hardly be imagined, and possibly may lose some of its charm. But anyway, the Mediterranean will still be there.

"Naturally, the work here is very interesting as always. Competition is much more keen, and a real challenge, but who can do anything about that! Of course, we still have interests in Latin America—Puerto Rico, Central America, Ecuador, Colombia, Venezuela, Peru and Chile—and some of the offices are quite active, but it is hard to replace Cuba and all it stood for. It is good to be back, and I hope the boys will look me up on the 28th floor of the Woolworth Building, where I went to work in June, 1913, after a year as assistant instructor for Professor Spofford. It is an easy landmark to find. You will always be welcome!"

**Willis Salisbury** writes from Athens, Greece, on April 13 as follows: "Dear Jonathan, Your card forwarded here reached us on arrival yesterday. We left home January 21 for around the world via New Zealand, Australia, Singapore, Bangkok, Calcutta, Delhi, Karachi, Cairo, Luxor, Jerusalem, Tel Aviv, Haifa, and now Athens. We will leave tomorrow on a week's cruise to Istanbul, and the islands of the Aegean Sea. Then to Spain and Portugal for a few weeks and home. We celebrated Easter at midnight last night, on the balcony of our bedroom, overlooking Constitution Square and watching the fireworks all over the city, the parade headed by the King and Queen leaving the cathedral with lighted candles, the Parthenon right in front of us lighted by floodlights and a full moon over it all. Guns boomed and skyrockets lit up the sky! What a sight to remember."

**Rudolph Fox** writes from Denver: "I always envy your peregrinations to distant places. Our last sortie was most mild comparatively—to Phoenix last month for a brief vacation. Woodworking and stamp collecting fill in some of the hours as does bowling on the green. We seem securely anchored to Denver and the same house in which we have lived for 42 years. Would that our children lived closer—our son is in Toronto and our daughter in Short Hills, N.J." . . . **William C. Bird** reports as follows: "I retired in April, 1961, as a director of Warner-Lambert Pharmaceutical Company and also as chairman of the board for Prophylactic Brush Company, having been president for many years. Had to miss the reunion last year having had a slight coronary in Florida playing golf. Am now back again playing and feeling fine. Have, however, given up most of my outside activities, but enjoy golf, fishing, and wintering in Del Ray Beach, Florida, each year.



Also enjoy my daughter and her three children who live in Longmeadow."

**J. C. Hunsaker** reports that age has pushed him off interesting activities, including the boards of directors of Shell Oil and Goodyear Tire, advisory boards of Sperry and Chrysler and the Museum of Science trustee council. He continues as regent of the Smithsonian Institution and a director of the McGraw-Hill Publishing Company. As an emeritus professor he keeps his office at M.I.T. and participates in activities of the Department of Aeronautics and Astronautics. . . . **Milton Kahn** reports that he is as busy as ever with civic, educational and communal work. The Kahn's had a five-week vacation in the South during January and February but had to go back North to get warmed up. . . . **Henry W. Coddington's** new address is 27 Breadale Road, Clifton, N.J. After 47 years with Public Service Electric and Gas Company, he retired in December, 1959. Coddington visits with **Harold Brackett** and **Bob Wiseman** occasionally. The Coddingtons spend their summers on Martha's Vineyard with side visits to their two daughters, Eleanor Bennett in Maywood, N.J., and Frances Baker in Brattleboro, Vt. . . . Judge **Antonio S. Romero** is still at the same address: 57 Washington Ave., Santurce 34, Puerto Rico. He is retired and is in good health and occasionally travels in Europe. He had to miss the 50th Reunion last June but we may see him on Alumni Day, June 10.

**Cy Springall** and **Marjorie** extended their California visit but are now en route back to Andover via Las Vegas, Grand Canyon, Flagstaff, Santa Fe and Taos. . . . Our class secretary, **Fritz Shepard**, is on another extended tour and cruise so we can look forward to his narrative when he returns. . . . **Jim Cook**, our dependable reunion chairman, is back in Marblehead from a stay in Clearwater Beach, Fla. In Florida, the Cooks had a good visit with **Larry Cummings** and his wife **Laura**—**Jonathan A. Noyes**, Assistant Secretary, 3326 Shorecrest Drive, Dallas 35, Texas; **Frederick J. Shepard, Jr.**, Secretary, 31 Chestnut Street, Boston, Mass.

Some of us who have been working on the SCF went to New York to attend the May 7 dinner event. Your secretary saw **MacLeod**, **Peaslee** and **Dinsmore**, and although I did not see him, **Chatfield** was reported to be present. As there were about 1,100 people present, it was not possible to do much circulating. **Dinsmore** and I met in the afternoon before the dinner to discuss the 50th Reunion. Ray has many of the details well under way.

**Arthur W. Johnson** has now moved from Florida back to New Hampshire for the summer. Since others move every year as well, it is often difficult for the Alumni Office to determine which address is permanent, so in sending a change from season to season, the Alumni Office would appreciate it if you would indicate which is the permanent address. The 50 Year Roster, soon to appear, would be helped by this as well. . . . **Edwin Hayward** has just changed his San Francisco address from his business office to his residence. It looks as though another classmate is entering retirement. Unfortunately this cannot be checked before this last spring issue.

Another classmate, **Thomas F. Comber**, died on June 17, 1962. Thomas' home was in Lawrence, Mass., and he attended St. John's Preparatory School at Danvers, Mass. He was interested in athletics, playing on the class basketball team for three years, including one year as captain, the class baseball team for three years, also one year as captain. In World War I, he was a second lieutenant of engineers and engaged in the Aisne-Marne, Chateau Thierry, and the Meuse-Argonne battles. As a professor of civil engineering, he spent over 30 years at Johns Hopkins University. He is survived by his wife, a son and two daughters.—**H. B. Richmond**, Secretary, 100 Memorial Drive, Cambridge 42, Mass.; **Charles P. Fiske**, President, Cold Spring Farm, Bath, Maine; **Herman A. Affel**, Assistant Secretary, R.F.D. 2, Oakland, Maine; **Ray P. Dinsmore**, 50th Reunion Chairman, 9 Overwood Road, Akron 13, Ohio.

# '15

"1915 The Class Supreme"—**Al Sampson's** new cute rhyming slogan at our Alumni Day Class Cocktail Party. The whole story will be in the November column. . . . In our March notes, **Wink Howlett's** death was recorded as Nov. 12, 1962 but should have been December 12, 1962. . . . **Phil Alger's** sense of humor saved him from the production line at the hospital here and we do hope he will not have to return: "While in Boston I paid three visits to MGH in the course of three weeks, because they wanted to cut me up, but couldn't quite justify the procedure, and kept having afterthoughts. Finally they let me go reluctantly, with an indefinite reprieve, but they gave me a number so when I return I can be processed immediately. When I do return, I hope you'll visit me! It is just a little while before we'll have to attend the 50th Reunion—may we all get there in good form, even if we do have a melancholy crack in our laughter!"

**Herm Morse**, Akron, writes an entertaining account of himself: "This time I am making the sending of my 1915 class dues the first order of business. It is easier to do this as with 15 months of retirement behind me there is more time for personal affairs. This doesn't mean that I am bored as so far there has been plenty to interest us. Quite by accident within a few weeks of my retirement December 1, 1961, I was asked to teach 10 weeks at Kent State University in the College of Business Administration to replace a professor whose recovery from an operation took longer than anticipated. This was an interesting job and gave me a chance to see whether the young people of Ohio were getting a dose of the Harvard-Washington brand of economics the nation is trying to live through and not go broke. As far as I could see they were being given a more solid education. When this stint was over it was time to go to Florida for a few weeks and by the time we came back the lawn

# '14

The high point of the Institute's recent history is the Second Century Fund, which was just completed and has been covered elsewhere in The Review. There is probably no '14er, far or near, who has not heard of the campaign and for the most part aided in this important fund. At this age all of us have been solicited for many types of funds. Many of our classmates are now far from Cambridge and their giving is done on faith. The few of us nearby have had the pleasure of seeing what the Institute's needs have been—both in equipment and buildings. Next year, we will celebrate our 50th Reunion. A re-visit to M.I.T. then will be a most rewarding event. . . . Yes, the trolley cars have been removed from Boylston Street and from the Harvard Bridge as well.

## Deceased

HOWARD R. BARTON, '94, 1961  
JOHN E. WARREN, '98, Jan. 17  
WARREN A. EDSON, '00, May 10\*  
WALTER U. JENNINGS, '00, April 12\*  
WILLIAM WHIPPLE, '01, Sept. 29\*  
FRANK H. SMITH, '02, May 24  
GILBERT TOWNSEND, '02, March 7\*  
CONSTANT HUNTINGTON, '03, Dec. 4  
CHARLES R. CARY, '04, Feb. 24\*  
PHILIP B. STANLEY, '06, May 11\*  
GORDON M. GILKISON, '09, March 30  
HAROLD D. BILLINGS, '10, April 18\*  
VAN COURT WARREN, '10, April 14\*  
EDMUND B. MOORE, '12, Nov. 12  
THOMAS F. COMBER, '14, June 17, 1962\*  
HYMAN FREED, '15, May 4  
ROBERT A. SCHMUCKER, '15, July 2, 1962  
WILLIAM I. BOWDITCH, '16, Dec.  
L. MUNGER MEANS, '17, April 3\*  
HERBERT F. JERMAIN, '18, March 25\*  
PAUL H. HOWARD, '18, Jan. 4\*

ELI ETTLINGER, '19, Jan. 18  
JOHN P. GRILLI, '20, March 9\*  
ROBERT T. PENDER, '20, March 13\*  
LEWIS S. EDGARTON, '21, Feb. 20\*  
HARRISON H. MOSHER, '21, April 18\*  
ERNEST A. PEARSON, '21, Jan. 1\*  
WILLIAM F. DRISCOLL, '22\*  
WILLIAM T. DUNLAP, JR., '22\*  
WILLIAM C. GILMAN, '22, April 30  
MAX J. STEINBERG, '22, April 9\*  
WALTER S. MARDER, '23, May 1\*  
JOHN R. LYONS, '25, Feb. 20\*  
AGUSTIN M. VALDES, '25, Jan. 29\*  
DAVID W. CRAWFORD, '28\*  
FREMONT S. TANDY, '28, Feb.  
RUSSELL C. PRATT, '32, April 25\*  
EDWARD H. THORNE, '32, Nov. 24\*  
RENATO P. IODICE, '35, April 9\*  
ROGER E. NEEDHAM, '35, April 9\*  
HUGH L. CHRISTISON, '38\*  
PHILIP G. BRADY, '40, July 11, 1962  
MARTIN O. SORENSON, '48

\* Further information in Class News.



and the golf clubs needed attention. In July we went by train to San Francisco, then to Seattle to the Fair, to Victoria, B.C., and back with stops at Lake Louise and Banff. In late September and early October we drove through New York and upper Vermont and New Hampshire to see the fall colors that were even redder than usual this year. Soon now we will be off to Florida, and this next June we plan to take our older daughter with her husband and two children for a 30-day trip to England and Europe. If we can keep our health we hope to do this again in 1964 or 1965 with our other daughter and her husband and two children. Marjorie joins me in sending our kindest regards to you and your good wife. Of course high on our plans is the 50th in 1965 and we hope to have our health so we can come and enjoy it. In the meantime buy all the Goodyear products you can so my pension and dividends will be secure."

Just read this awful abuse from **Ben Neal** who certainly knows something about collecting money for our 50th Fund: "Your timing is terrible. Why did you have to ask for class dues just when you are taking off for the South Pacific. Keep part of my check for the class and with the rest buy a drink for Fran and yourself. I mean the kind with the Hawaiian orchid on 'em!" Now, just what does Ben mean? . . . **Sam Otis**, Winnetka, Ill.: "I'm presently fully retired, and have been granted an 'emeritus' status by the American Institute of Architects. I am now commander of our local American Legion Post #10, where, at a forthcoming entertainment meeting they expect to show two motion pictures on early American History, made by the 'Encyclopedia Britannica Films.' In these two films, I played the part of Benjamin Franklin when he was 'minister plenipotentiary' to France, circa 1780, and also when he was instrumental in forming the U.S. Constitution. For further details see March 7, 1959, issue of the Saturday Evening Post, p. 88, article entitled 'They Make the Strangest Movies.'" . . . **Foss Purinton**, Venice, Fla.: "On account of a couple of heart attacks all my hobbies such as mountain climbing, tennis, squash, and sailing have been taken away from me. They have been replaced by the only one of which my doctor would approve and that is painting. I started a year ago and find it very fascinating. I wish I had started years ago. My doctor also relegated me to Florida for the winters and that isn't hard to take either." We do hope he is better. . . . **DeWitt Ramsay**, Bridgeport, Conn., shows how to enjoy retirement: "I am retired from Smith, Ramsay and Company, members New York Stock Exchange, after almost 40 years. My wonderful wife and I now travel. Europe, our West Coast, Florida, Canada and next month we go to South America. I am on the board of directors of several corporations including New England Gas and Electric Association." . . . **Ed Sullivan**, wintering at Lauderdale-by-the-Sea with his sister Ann: "It's great that you are going on a cruise to New Zealand and Australia. You will enjoy

both countries, I wish I could go with you, for if I were younger I would like to settle down there. This part of Florida has had a lot of rain and not much sun but it's better than the Boston winter." . . . **Speed Swift**, New London, N.H., slowing down from his gay younger days, piles a little abuse on me: "There's nothing much new about me. I still go up to the Hospital Clinic once a week for 'inspection.' Don't dare to go too far away from home (like Boston). I am not exactly like a hermit, although sometimes it seems so. I entered Tech in fall of 1908 and graduated in 1915 after spending some time in Texas and way stations. Similarly, **Robert Parker Sherman** entered Tech in 1908 and graduated in 1915, after spending some time in the Far East. Bob died May 6, 1962, in Santa Cruz, Calif. . . . Don't you have any income tax worries? This seems like a heck of a time to ask for dues. However, I do enclose a check. Keep up the good work!" I wonder has any one ever approached or equalled his record for attendance at Tech. But, we're glad and proud to have a grand fellow like Speed in our class.

Ah, that **Jim Tobey** suffering in West Palm Beach and heaping abuse on me: "This touching epistle sounds as if you were planning another trip to Europe or the Orient, or Cuba or somewhere. We will cease to suffer in Florida about the 10th of April and start hieing back to Newtown. Yesterday it was about 90 here, today is 65 after rain last night. On the whole the weather has been good, and the social life is active and constant. With all our best to you and Fran, and hoping to see you in Connecticut next summer." . . . Faithful **Charlie (Speed) Williams**, New York City, is off to enjoy pasta and pastries in Europe this summer: "Your calls for help are always so pleasant that it is a pleasure to respond. We plan a trip to Italy and France in May. Hope you had a grand time on yours. 'Twixt the fog and the grog,' I seem to remember your saying you were off to Hong Kong or somewhere. I thought the 1915 New York dinner as always a grand party. Many thanks for your nice letter and your suggestions. I shall try to hit the places you recommend. I have a gourmet son-in-law, too, who has been over a couple of times and is coaching me at length on the culinary delights of Italy and France. You can expect to see two of me, both broke, on our return. We sail April 22 on the 'Mauretania' to Naples, and leave Southampton May 31 on the 'United States.' I've just gotten back from a few days with my brother in Corning. Didn't see **Otto** at Rotary as I sometimes do. He's probably in Boola Boola or somewhere. Thanks again. You and Fran will have a grand trip, I know, and no one deserves it more." . . . **Pop Wood**, Windy Row, Peterborough, N.H.: "I am glad to hear from you which of course indicates that Fran still lets you hang around. I am getting along that line pretty well myself. Sometimes, though, I think Charlotte has to put up with a lot. Well, we certainly have had some winter up here. Right now we have around 40 inches of

snow. I have been very busy either plowing or shovelling. My back looks almost like a pretzel. The temperature has been down to 18 degrees below zero. So all in all we have had some winter, and maybe there is more to come. I am glad we are having a spring dinner. I always look forward to and enjoy those dinners, even if I have to lower my standard of dignity. Charlotte joins me in the best of everything and we hope you and Fran can run up sometime when the green grass, etc., is out." At his age, Carl better take that shovelling easy or he won't have any back at all. Be careful, Pop, you're not as young and as spry as you used to be.

**Louis Zepfler**, Tucson, Ariz.: "I have always enjoyed reading the class notes but never felt I had much of interest to offer. I am enjoying a new life with a new wife in a home in a new section of the country. Arizona is growing in leaps and bounds and we find it delightful from October to June. The balance of the year finds us in Minnesota or on the East Coast. Last year after visiting the Seattle World's Fair we drove to Cape Cod, stopping in Minnesota to visit relatives. At Cape Cod we had a wonderful summer close by my sister and her husband, Heine Gartner, '17, who operates an antique rebuilding and repair shop at South Wellfleet. Thanks to your notes I was able to meet **Wayne Bradley** whom I hadn't seen since our 25th Reunion. We had a delightful visit with him at his very fine 40 Acres Inn, in Pike, N.H." . . . In some recent issues of the "New England Real Estate Journal," **Sam Eisenberg** has a long piece, "Building? Know What's in the Architect's Contract," in which he forcefully describes the architect's function, duties and fees. Sam is a member of the American Institute of Architects, the Boston Society of Architects, the Boston Architectural Center, the Massachusetts State Association of Architects and the City of Boston Zoning Board. He has handled many large jobs all over New England, one particularly getting a big write-up in the "Lowell Liberator." . . . On their pretty Christmas card, **Jerry Coldwell** wrote: "It seems good to get back home where everything is clean and you don't have to worry about the food and the water." Jerry's feelings are easy to understand when you read the pamphlet describing his recent trip, published by the "Defense Orientation Conference Association." Fifty members and thirty-six of their wives, paying their own expenses, traveled through Honolulu, Tokyo, Seoul, Okinawa, Taipei, Hong Kong, Manila, Saigon and Bangkok in exactly one month. Quoting from their President's report: "It has been a tremendous experience—one which we will never forget as long as we live. We have been to places and seen and done things that probably no group of American civilians has ever before had the privilege to experience. We came away proud that we are Americans, proud of the people who represent us on this far flung frontier, and proud of the American boys who are personally standing by, ready to sacrifice their lives if necessary." . . . **Vince** and

Marion **Maconi** dodged the New England winter in Lake Worth, Fla., enjoying good weather and golf. . . . **Hank** and Virginia **Marion** have enjoyed a long winter holiday at Lauderdale-by-the-Sea and have acquired a handsome bronze tan. And they had fine weather all their stay. **Ed Sullivan** met Hank on the beach and thought he was an Indian. . . . So, here ends another year of notes. Good-bye, all. Enjoy a happy and healthy summer. Many thanks for everything you've done for 1915 and to "help Azel."—**Azel W. Mack**, Secretary, 100 Memorial Drive, Cambridge 42, Mass.

## '16

We don't know now, on May 10, just how many are to be at the 47th Reunion at Osterville but there are indications of a banner interim reunion as far as quantities are concerned—and speaking of quantity, we are quite certain from what our president, **Ralph Fletcher**, says about the class that quality will be there! A complete account will be given in the November issue. From Ralph's office comes word from our hard-working reunion-attending-and-arranging honorary class-member, **Bob O'Brien**, that 35 or 40 will be there. Cards returned to Ralph give an assortment of reasons for absence which we note for the record. **Al Pettie**, now living again in the beauties of Tryon, N.C., after his several-year sojourn in Venezuela, writes: "Sorry, but I won't be in New England until a month or two later." **Clayton Hawes** in North Dartmouth, Mass.: "Will be in Europe." **Frank Darlington**, who winters in Leetsdale, Pa., and has been in Hyannisport every summer for 66 years, doesn't expect to get to the Cape until June 15. **Charles Cellarius**, in Cincinnati: "Sorry, I can't attend"; and **Howard Hands** in Clearwater, Fla.: "Sorry—too far away." **Willard Brown** writes: "Best wishes for a grand occasion—will be in England and the continent; in June 7, 8, 9 will be at Schloss Itter, Worgl, Austria and at Schloss Monchstein, Salzburg." **Harold Gray's** regrets were due to "commitments in Rochester this year at Reunion time." **Ed Hall** of Baltimore notes: "Will be in England then—abroad April 13 to July 3." **George Tuttle** in Pembroke, N.H.: "Possibly another year when we are feeling better"; and **Ed Williams** in North Falmouth: "Sorry but health will not permit. Best wishes to all." Two in Florida indicated they were waiting for the 50th; **Lewis Dow** in Odessa with "will see 'you-all' at the 1966 Reunion" and **Norm Vile** in Tavernia "50th maybe." **Thomas Atchison** writes from Princeton, N.J.: "Will not be able to—wishing you all a good time" and then a note about **George Sutherland's** passing. **Mark Lemmon** in Dallas: "Hope next year—just recovering from an operation." **Maynard Guss** in Santa Barbara says that "California is too far away," and **Frank Bucknam** in Auburn says the same thing. **Frank Ross**, who reported golfing and Republican-walking in Florida in a previous issue, says:

"Must be away at that time." **Dexter North** in Washington, D.C., has his 50th Reunion at Hamilton College on June 6. The **Vertrees Youngs** were about to leave on May 15 for Africa, and **Herb Gfroerer** in Hamden, Conn.: "Sorry—but our two sons keep us busy."

Ralph Fletcher tells of reassuring **Joe Barker** back in April that he and Sibyl were quite well as far as Switzerland's Zermatt was concerned. As we understand it he said something like: "You shouldn't have worried because we never drink water, or not often enough to get infected." He feels that Zermatt will probably be the safest place in the world as far as typhoid is concerned. He tells of **Peb Stone's** reminder that skiing isn't the only form of elderly exercise—Scuba diving, especially near Philipsburg, St. Maarten, N. W. I., is fun too, especially 30 feet down among the fishes. We asked Ralph to tell us a bit about his second trip to the Swiss Alps, for he surely surprised everybody by carrying a broken leg in a cast to Switzerland and back. He had two quiet weeks in Davos "while Sibyl, Ann, age 5, and Sam, age 7, enjoyed themselves skiing. I didn't have the other half of skiing since dancing was out but I did have better than one-third of it and you can guess what." Then in reference to his broken-bone competition with **Dave Patten**, he says: "Dave and I have been running neck and neck to see who will win the battle of the cast. Dave started out well with a pinned ankle joint and I had a hip cast and then almost the same day the pins were taken out for Dave and a hip cast put on, and I had a new cast put on and a promise of a brace around the 10th of May. It must be that bourbon carries more calcium than scotch." And further on this subject, Ralph reports this message from Dave—from so-to-speak one broken leg or cracked ankle to another: "Sorry to learn from **Jim Evans'** 'What Cheer Club' that you have at last joined the broken-bone-yard. Time catches up with these brittle oldsters such as we. Hope you have a good patch-up job for that's important. I was lucky to get the Smith-Peterson nail treatment which found me out on crutches in three days, but laid up for another 6 to 8 weeks. However, best of luck, and may you help me kick the beam sometime." . . . As we write, the **Irv McDaniels** are on their four-month trip home from Spain—will end up in Los Angeles in time for Thanksgiving, and as Irv puts it in a letter to Ralph "end our education. Getting educated at my age is difficult—the hardest thing is to remember." And Ralph's reply: "Don't overeducate yourself. I think there is a limit to how much information you can stuff in your crock and have it available for instant withdrawal."

**Cy Guething**, commenting on Ralph's perambulatory problem, said he knew Ralph would break a leg or something, after hearing him put up such a holler for what-was-it in 1961 at Oyster Harbors! Cy has been active in promoting the 47th Reunion, urging both the **Gene Lucases** and the **Moose Jewetts** to come along, saying: "Of course, **Steve Brophy** will be there and that completes the liv-

ing Chi Phi's." Also, according to a letter from **Phil Baker**, Cy and Gyps did a little entertaining on April 28—Phil and Thelma and the **Gene Barneys** were their guests, first for cocktails "at Cy's very pretty home" in Birmingham and "thence to their club for a very delightful repast." Phil says that Cy is a "very active fellow; his home and his extensively and highly cultivated gardens reflect his initiative and energy." (We understand too that Cy himself does the whole job of outside painting of their home, from top to bottom—we can't climb that high!) During July and most of August, the Guethings will be at the Ojibway Club of Pointe au Baril, Ontario, where they will be comfortable with their "own suite and Acorn stove." As for fishing: "Small mouth bass predominating, but perch, pickerel, and northern pike are caught with the same lures and bait. The swimming each day, sailing occasionally, and partying overflow the time. A leading citizen at the club is David Rogers, '15, from Toronto."

**Willard Brown** is having a busy three months—May, June, July—all centered around the quadrennial Lighting Congress of the International Commission on Illumination, held in Vienna in June. He is president of the U. S. National Committee of the Commission, and expected about 60 U.S. delegates to participate "representing about every phase of the lighting art and industry in this country." The congress takes up nearly two weeks. He says: "Just about every night there is an official 'entertainment' ranging from the reception by the Lord Mayor to a special performance of the famous Spanish Riding School horses to a day on the Danube—a formal banquet with entertainment by the State Ballet. (Joe Barker will remember some of such he enjoyed at a C.I.E. Congress in England back in 1931.) Gosh, that was 32 years ago! Are we getting old?" The total program includes a week of formal dinners and meetings in London, two weeks up-country in England and Scotland (N.B. for **Francis Stern**: "We hope to get in a bit of salmon fishing in Scotland"), a flight and a few days with friends at Bad Homburg, and stopping at several castles on the way to Vienna. Then after the two weeks of hard work, a Volkswagen trip to Italy, a few days at the Riviera, then up the Brittany Coast to France. He writes: "You see, Mrs. B. and I spent over two years at Brest in the Navy during World War I (She was a Navy nurse). It's a long time since, and we have a yen to visit some of the old haunts. The Brittany Coast is at its best during early July, and how well we still remember the tastes of the marvelous lobster, the fresh small mackerel, the succulent artichokes, the enormous strawberries with fresh soft Brie cheese!!! And apple brandy rivalling New Jersey's very best." We'll expect a first-hand report from Willard at the 48th Reunion in '64!

**Bob Wilson**, Commissioner, U.S. Atomic Energy Commission, presented a paper on "Expected Impact of Nuclear Energy on Our Economy" before the Institute on Economics of the Petroleum Industry, International Oil and Gas Education



Center, Southwestern Legal Center, Dallas, Texas, on April 19. We would like to quote more but must be satisfied with just an item or two. He stated that under certain assumptions, nuclear energy will supply "only about 7 percent of the country's energy requirements during the remainder of the century." Again: "By the year 2,000 we estimate that one half of all electricity generated in this country may come from nuclear plants and that virtually all new capacity installed thereafter will be nuclear". And also, on the basis of certain things stated by Bob: "We know with certainty that nuclear fuels, if efficiently used, can supply as much energy as this country will need for many centuries to come." Ask Bob for a copy of this most interesting paper. . . . **Clint Carpenter** reports another type of item of major importance—a new granddaughter—"seven months old now—daughter of my son Jerry (M.I.T., '54). He has been here in the business with me for almost seven years now. We are delighted that they live near us and the baby is really one to be proud of." . . . **Jim Evans**, reported in the June column as back in the hospital on April 10, came through his difficulties, and he now sounds bouncy again in frequent telephone conversations, and was looking forward to the reunion. He is especially grateful for the many letters and cards received—the source of much of the information that follows. **Irv McDaniel** tells Jim of some hospital experiences of long ago: "One half of the doctors believed in getting the patient up in two days; the other half believed in three weeks in bed. My surgeon was of the second group. The first group gang would come in and look at me and say 'Adhesions!' and then they would nod in unison. Six months later I thought I had adhesions—it was merely the muscles relocating themselves. A month later all the A.M.A. went over to the first group method—so you were spared my unnecessary discomfort." . . . **Hovey Freeman** in acknowledging one of the red belts that Jim had made up for reunions gives his thank you: "for the red belt which I shall delight wearing with my sport pants this summer. It will save wear and tear on one of my wrinkles which I generally use as a pants hanger." . . . **Bill Barrett** tells Jim that "this retirement" has been the busiest he has experienced in a long time but he enjoys it. . . . **Clint Carpenter** reminded Jim that he was a relatively young man, for "Winston Churchill went through a similar operation at a greater age as well as other trying experiences since then. In any case a young man like you is supposed to have spring fever at this time of year and even if you do not feel that way it is a good excuse for you to say you do." . . . **Ken Sully**, in wishing Jim well, points out that he had a like operation last August, and that a bit of pneumonia delayed his recovery and return home from the hospital but "now I've regained all the weight I lost. I've just put in four hours working out in the yard." . . . **Stew Rowlett** suggested that Florida, where Jim has a brother, was an excellent place to recuperate. . . . **Phil Baker**, in writing Jim, mentions having

a long informative letter from **George Petit** and comments: "He is quite a fellow and does well still in selling his opinions." . . . **Francis Stern** tells Jim that he has little patience with people "our age" who think they can be mountain climbers and skiers, adding: "Little me—what do I do? I fish like a gentleman should. True, I slip and fall in the stream, bang my knee, and at the moment I have a lump on my shin where I hit a rock, but I don't try to break anything and I don't do things I shouldn't, like skiing." . . . **Maury Holland** writes Jim on the letterhead of Communications Research Institute, Coconut Grove, Fla., which lists Maury as executive assistant to the president. In early March he said he had just returned from a four-day inspection of their laboratories at St. Thomas, Virgin Islands, with the director of his company, Dr. John Lilly, author of the book "Man and Dolphin" and Florida neurophysiologist. The Institute is interested in space communication, and, in considering how we might best communicate with space creatures, is engaged in basic research on communication with the bottle-nosed dolphin. As indicated in a Newsweek article (10/22/62): "Dr. Lilly, who is convinced that man will communicate with another species 'within the next decade or two' has long considered the dolphin the most likely possibility." Maury notes that Maury, Jr. is working for his Ph.D. at the Harvard Graduate School. . . . **Arvin Page**, writing from Winston-Salem, suggests that if **Jim Evans** really wants to beat the 1913 crowd at golf at the reunion: "Just sign up **Frank Ross**, give each of the opposition a stroke a hole, and let Frank play their best ball. . . . Line up a good match for June, 1966, and you can count on me." . . . And **Barney Gordon's** message to Jim was: "Although none of us relished such an experience, as compensation I hope they will assign some real beauties as nurses! Seriously, though, you have my best wishes and I know that in a few weeks you will be rarin' to go."

**Vert** and **Sylvia Young** were sailing on May 14 for Cape Town on a Lykes freighter from New Orleans. This is to be mainly "a geological and minerals collecting trip, with a little game hunting for 10 days in southwest Africa. We expect to go as far as Salisbury in Rhodesia and may possibly drive as far as Nairobi to have a look at Kilimanjaro, which we missed on our trip four years ago. However, the latter appears a little unlikely at the moment, as it is a pretty long jaunt from Salisbury to Nairobi." Sounds like an exciting trip!

**Shatswell Ober** continues at M.I.T., and in response to our request for a bit of news had this to say: "Can't write much except to repeat the statement in last year's Review, 'Still carrying on in an unexciting (but far from dull) semi-retirement at M.I.T.'" . . . **Hovey Freeman** finds himself busier than ever. He had hoped it would be "the other way and that I could take things easier, but certain factors beyond my control—retirements, sicknesses, etc.—have just made this impossible. I find running an insurance company is easy compared to

running a hospital. Doctors are individual prima donnas and have to be handled with gloves. New construction which will total well over \$1.5 million is very time consuming and so it goes." Hovey was leaving for California May 6 to be gone 10 days to visit their West Coast offices and "to attend meetings of the N.F.P.A. at Portland, Ore."

**Jap Carr**, down in Palm Beach, reported that until mid-February he had been working at his hobby—tennis—nearly every day but then "the roof fell in on me." He spent some time in the Good Samaritan Hospital, with pneumonia complicated by a couple of not-too-serious operations. He wrote: "What am I doing? Nothing much. Who have I seen? No Sixteeners. Children or grandchildren? I'm probably the only member of the class with a son a freshman in college. His wife is expecting in May which will be our second grandchild. Our granddaughter here in Palm Beach, 5 years old, is carrying on a mutual and violent love affair with her grandmother." Jap was hoping to get back at his tennis about a month after the time this was being written, or soon after.

We forgot to mention above that a card from Ralph, dated April 5 and postmarked Davos, noted that he had had a call from **Tom McSweeney**, who is acting as a valuation expert for a neighbor of Ralph's in a land damage suit.

**Nat Warshaw** continues more than busy in his specialty of over 40 years—materials handling—as executive vice-president of Bostonian Engineering Company, materials handling consultants, and as vice-president of Barry Hyman Company, a large materials handling equipment organization, both in Boston. For a fascinating account, get Nat to talk about new developments in chain store warehousing, mechanization, skid-platform and lift-truck systems, and multi-level conveyor systems. It all comes down to handling large quantities of goods with minimum effort and time. Nat has a most interesting article (with a good picture of himself) on page 44A of the special supplement to a recent issue of 'The Modern Retailer.' In his letter he says: "As a matter of fact, we did about six of these engineered jobs in the last year. We just turned the key on a big one for Zayre in Framingham. This new warehouse is 250,000 square feet on one floor and they put in almost \$1 per square foot in machinery for handling not including the computer system. We helped the vice-president pick the site and then did the preliminary work before the architects took hold."

The **Harold Millses** left Mountain Lakes, N.J., on May 7 on another of their cross-country drives with exploration-time in southeast Utah. As they left, they were not sure, but held open the possibility of visiting their two daughters in California. . . . **Will Wylde**, writing from Anna Maria Island, Fla., says that while he skis, he is not "such an all-out skier as Ralph Fletcher, so we shove off down here about mid-January and stay until May 1." Says: "Vermont is a lovely state even including January and February but March and April there are for the birds. So we stay down here until the



leaves begin to come out or, to put it another way, until my asparagus patch comes to life." With three other couples they are enjoying retirement with this Florida sojourn each year, and he notes, probably with a twinkle, that they "do not have the pleasure of sitting on a porch of an afternoon and watching two lanes of traffic moving slowly bumper to bumper." . . . We were glad to hear from **Charlie Glann** in Oswego, N.Y. He retired in 1958 as Senior Building Electrical Engineer with the New York State Department of Public Works, Division of Architecture. He speaks of this year's annual return to Albany at Easter time to visit his children and 15 grandchildren (our woefully not-up-to-date records indicate that 15 is exceeded only by **Eric Schabacker**, 18, and **Hovey Freeman**, 21, but that **Earl Mellen** and **Paul Duff** are gaining). Charlie, widowed in '58 and remarried 18 months later, is on the church council and is chairman of the Stewardship and Finance Committee of St. Paul's Lutheran Church, Oswego.

**Peb Stone** still waxes enthusiastic about their February-March Caribbean trip—especially the two weeks at St. Croix and the snorkeling around Buck Island reef (now a national park, recently dedicated by Secretary Udall)—something he enjoyed no end with Gordon Brown, '31. He speaks of shopping at St. Thomas, "best in the islands;" a casino in St. Maartens; the good job of restoration of the inn on the cliff above English Harbor (Nelson's Dock Yard) in Antigua; scuba diving 30 feet down and the Crown Point Hotel in Tabago, "the best hotel of the trip, all told;" and in Trinidad, the amazing new Hilton, "the upside-down hotel—arrive on the top floor, rooms go down to the seventh after two general floors—stupendous views." For where to go, ask Peb Stone! . . . **Ed Williams** writing from North Falmouth says that the past two winters they have stayed put on Cape Cod instead of migrating to Florida as usual. "Fortunately the past winter was an open one so we spent much time in exploring the Cape. My wife does all the driving as I relinquished the wheel following a serious coronary in 1953." Their son Edward, M.I.T., '47, is vice-president of one of the Factory Mutual Companies with which Ed was formerly associated for over 40 years: "He has two daughters, so I can count two grandchildren—nothing like Hovey Freeman's record!"

The Class was well represented at the Waldorf Astoria dinner on May 7, honoring Alfred P. Sloan, Jr., '95, and celebrating the successful completion of the Second Century Campaign. At the head table were **Steve Brophy**, who handled the arrangements, **Van Bush**, and **Bob Wilson**; and among the 1,100 at tables spreading up into two levels of boxes were Phil Baker, Walt Binger, Art Caldwell, Harold Dodge, Mac McCarthy, Francis Stern, Peb Stone, and Hy Ullian. And speaking of Steve Brophy—our warmest congratulations to him, for he has again been made president of the American Heritage Foundation, so widely cherished largely because of Steve's

earlier brilliant ideas and accomplishments, as, for example, the Freedom Train! . . . We understand that our good vice-president, **Joe Barker**, busy consulting for NASA and others, snatched a three-weeks vacation into the great Northwest in late April and early May.

The final monthly class luncheon in the M.I.T. Club of New York quarters in the Biltmore Hotel was held on May 9, with four in attendance: Art Caldwell, Jim Evans (his first New York luncheon since recent hospital days), Herb Mendelson, and Peb Stone. Where we meet in New York for class luncheons next, is not yet determined, but will be reported in the fall.

This closes the column for the current season. For a full report of the 47th Reunion, see the November issue. Many thanks to the many who have helped to make the secretary's job a pleasant one by sending letters and cards and clippings this past year. And now the best wishes of the class officers for a good summer and just the kind of vacation you have been waiting for.—**Harold F. Dodge**, Secretary, 96 Briarcliff Road, Mountain Lakes, N. J.

## '17

On April 25, the City of Cambridge, Mass., received the Ward Melville Silver Medal for "the best accomplishment in community improvement among American cities of intermediate size." The award to Cambridge is based upon the Technology Square development, new research and office center jointly owned by M.I.T. and Cabot, Cabot and Forbes Company. It is the first development in the country where an educational institution has used its endowment funds as venture capital for industrial or commercial development which will pay full taxes to a community. **Robert C. Erb**, President of the Melville Shoe Corporation, presented the award to Mayor Edward A. Crane of Cambridge. (We are informed that Bob Erb gave an excellent review of the history and purposes of the Melville Medal.) In the brief ground-breaking ceremonies, Mayor Crane was joined by Dr. James R. Killian, Jr., '26, Chairman of the Corporation of M.I.T.; Gerald W. Blakeley, Jr., President of Cabot, Cabot and Forbes; and Chairman **John A. Lunn** of the Cambridge Redevelopment Authority. The Technology Square project is the first urban redevelopment project for Cambridge, and the first one to be completed in the Commonwealth of Massachusetts. (Al Lunn has just completed his third term as Chairman of the Redevelopment Authority and his fifth year as a member.) The Technology Square will be operated by a real estate trust with members from M.I.T. and Cabot, Cabot, and Forbes. **Ray Stevens** is one of the trustees, thus 1917 had a leadership role in the festivities.

President **Lunn** arranged for a class get-together at the M.I.T. Club in the Biltmore prior to the SCF Victory din-

ner May 7 at the Waldorf. It was good to see Aldrin, Basch, Ray Brooks, Curtin, Dennen, Groves, Holton, Dunning, Stan Lane, Loengard, Lunn, Meloy, Dix Proctor, Claude Roberts, Rad Stevens and Josh Whetzel. **Walt Beadle** and Don Severance, '38, were at the dinner but unable to join us. . . . Don Severance (honorary '17) was recently elected to the board of governors of the Skating Club of Boston.

**Brick Dunham** and wife visited **George Donovan** in Florida for a little vacation. He reports as follows: "Edna and I were visiting with the **Carlton Deans** at the reunion, when I asked him if he knew anything about George Donovan, Course II 1917, who also worked for the Monsanto Chemical Company. I was informed that George had retired and was living at Marathon, Fla. George and I were classmates at Andover. As I have always been interested in fishing, I wrote to George and was answered immediately. As a result, Mrs. D and I, along with an oldtime friend and wife from Brockton, arrived at Marathon on March 9. The actual location is Key Colony Beach, a city, which after the 'Donna' hurricane has only 80 registered voters. During our period of correspondence, George was treasurer of the city, but by the time we reached there, the former mayor had left the area and George was told he had to take over. It is a non-paying job which will not stop George and his wife from traveling when they feel so inclined. His problems are taxes, traffic, speedsters, and a desire of some residents to give up the city charter, which would put them under the whims of the county. George wants the charter kept but is not keen about continuing as mayor. George lost the roof of his house in the hurricane, and most of his belongings were probably among the refuse the Navy pushed off the Key West road with bulldozers as soon as the storm was over. He also lost 11 pounds while clearing up the wreckage of his house. There are many of these wind rows of boat wrecks, refrigerators, beds, furniture etc., still in sight when driving toward Key West. . . . George's friendship with a neighbor put us aboard a beautiful 37-foot cruiser for a day of fishing in the Gulf Stream. An eight-foot shark took my bait and mashed it up in good shape but was gone when I tried to set the hook. George had warned us that the fishing in March was not good and we confirmed it that day by coming back skunked after dragging four baits for about six hours. However, it was a perfect day and the color of the Gulf Stream water is beautiful. George also took us out several times in his own boat, and fishing for the most part with bait we caught many fish strange to us. We enjoyed renewing old friendships as well as the boating and fishing."

**L. Munger Means** died after a brief illness on Wednesday April 3. In the summer of 1917, he entered the Army aviation, passed training as a pilot, and spent much of the war as a flight instructor. Leaving the service in 1919, he joined the B. F. Sturtevant Company at Reidsville, from which he entered the

aviation industry, his life work. After retiring, he resumed the hobby he had been forced to neglect so long, namely, the propagation of game birds. Stocking the family farm on Currutuck Sound with quail and pheasant he had raised, he used them for training his hunting dogs, shooting only enough to serve the purpose. He was not a slaughter sportsman, but a conservationist, replacing all game killed fourfold. In propagating game birds and in schooling dogs, he achieved considerable local distinction. Besides his widow, he is survived by a sister. Burial was at Dallas, Texas. . . . The M.I.T. Club of New York is closing its luncheon facilities and club room at the Biltmore Hotel as of May 31. **Dix Proctor** will notify us later where the monthly 1917 class get-together lunch will be held. . . . Please note that the theme for the class notes for next season will be "vacation experiences of classmates during the summer, fall and winter." Send yours to the secretary to be shared with your friends.—**W. I. McNeill**, Secretary, 107 Wood Pond Road, West Hartford 7, Conn.; **C. D. Proctor**, Assistant Secretary, P.O. Box 336, Lincoln Park, N.J.

## '18

The miracle of the great oak from the tiny acorn is one to which every teacher should give constant thought. To be sure, not every acorn is capable of growth, or falls on appropriate ground, but the potential should never be forgotten. **Bill Foster** left M.I.T. to go off to the first World War. Upon returning he was told he would have to repeat the first term of his senior year. His reply consisted of a few, well chosen Anglo-Saxon words. With the strength and individuality of an old oak he departed forthwith, and proceeded at once to a notable business success in New York, which was followed a bit later by conspicuous government service which ran smoothly to its goal. Currently he serves as director of the United States Arms Control and Disarmament Agency, to be honored last February with the degree of Doctor of Public Service by George Washington University. Here is a belated substitute (with interest) for the degree he might have had at M.I.T. In introducing Bill, President Carroll said: "The man whom we honor tonight has made an outstanding contribution to the welfare and security of our country. From service in enlisted status during World War I to his present position of eminence, he has displayed those qualities of mind and heart that have characterized great public servants and leaders in every age and nation. A man of innate warmth of personality, his career has been marked by consistently notable accomplishment in the successively broader challenges inherent in the positions of trust and responsibility to which he has been called. As a business executive he has helped to guide leading American industrial and civic organizations. As Undersecretary of Commerce, administrator of the Eco-

nomie Cooperation Administration, Deputy Secretary of Defense, and now director of the United States Arms Control and Disarmament Agency, he has served his country magnanimously and skillfully both in war and in peace. His sound business acumen, his profound knowledge of government, and his unswerving devotion to the ideals of democratic institutions and freedom, have combined to enlarge his vision, to enhance his statesmanship, and to deepen his human understanding. For his firm approach to the problems of arms control and disarmament, his wise counsel as a presidential adviser, and his distinguished contributions to the arts of business and government, I confer upon William Chapman Foster the degree of Doctor of Public Service, with all of the rights, honors, and responsibilities thereto pertaining, and welcome him into the fellowship of the George Washington University."

Bill's remarks were in part: "My subject today is the Business of Peacemaking. I recall in Thucydides' account of the Peloponnesian War he notes that while the Spartans were still debating about embarking on their eventual military adventure, there were in Sparta certain Athenian businessmen. On hearing some of the Spartans inciting to war, he writes: 'The Athenians approached the Spartans and said if there were no objections they, too, would like to speak before the assembly.' The Spartans invited them to do so. 'Think,' they cautioned, 'when people enter into war they do things the wrong way round. Action comes first, and it is only when they have already suffered that they begin to think.' . . . The Athenians and Spartans faced, and knew they faced, a long, bloody, and costly war, but each expected to be the victor and to survive in greater power and glory than ever before. This prospect is no longer given a victor in war. The Athenians noted that when men suffered they really began to think. Consider how true this is. My generation remembers how easy it was during World War I to embrace in general terms the idea of disarmament and the outlawing of war. The League of Nations was an expression of that. In World War II we had the Atlantic Charter, with its strong eighth point outlawing war; and later the United Nations, which has, as its central objective, the making and keeping of peace. If you will analyze the historic and nobly human efforts at peace-making, you will find that they, in broad design, divide into two main channels or concepts. First, men have sought peace in some sort of union of people based on law. They have wanted a set of laws, a court, a union of citizens. This has been the ideal, whether expressed by Abbé de St. Pierre, Jeremy Bentham, or Immanuel Kant. Victor Hugo wrote out a prophecy and liked it so well that he had it framed and hung it in his bedroom. He prophesied that the 20th Century would see, first a United States of Europe, then the United States of the world. Such a world, he felt, would make war as impossible between Berlin and Paris as between

Boston and Chicago. The second concept for assuring peace has had to do with the abolition of all military equipment. I was wryly saddened by the lampoon in a recent issue of 'Harper's' on 'Minutes of the Meeting of the Hebrew Committee on Relations with Other Nations, February 30, 800 B.C.' (Sling shots were to be added to the abolishment of spears by making sling shots into children's toys as spears were to be beaten into pruning hooks.) Chairman: 'Will the secretary read what he has down on that?' Secretary: 'They shall beat their spears into pruning hooks and their swords into plowshares, and the sling shots shall be given to the children to play with.' . . . I am just back, as I mentioned earlier, from conferences with the Soviets and others in Geneva. Naturally, I would like nothing better than to report that significant progress is being made. That, unfortunately, is not so. We are in areas of very precise negotiations which even the most careful and extensive news reporting cannot hope to cover in exact detail. The immediate task for the conference was and is to achieve a nuclear test ban treaty. The numbers of on-site inspections to which both sides will agree presently represents the major stumbling block. The Soviets want us to accept their figure of two to three without prior discussion of other crucial factors related to the on-site inspection question. We have, on our side, carried forward extensive scientific investigations which have guided us in determining the number and kind of inspections that we would have to regard in the national interest as a minimum. As a result we have reduced our inspection requirements from a sliding scale of 20 to 12, down to 10 to 8. This seems to us to be a reasonable range in order to guarantee a safeguarded treaty. In any event we could not think of changing these numbers without first having a clear understanding of the set of principles governing on-site inspection procedures and methods which will ensure that each on-site inspection can be meaningful. In our view, two to three on-site inspections are not enough to satisfy us that a treaty was being adhered to. These quotas might sound close enough for reasonable men to come to agreement, but may I say, you don't know the Russians! Endless days and hours can pass in rationalizations which, as I said, are painfully reminiscent of Mr. Judah's proposals for sling shots and plowshares. Yet, even in the face of obvious mistrust, and in the face of events and news that one day is up and the next day down, I believe that we must look at the basic facts. These basic facts are known to the Russians and are evident to us. I see in the present situation at least four hopeful factors which can lay the basis for meaningful disarmament. First, contradictory as it may seem, the present nuclear standoff is one such factor. While not a guarantee against strategic attack, it does assist—because of the deadly consequences if it were to be broken—in preventing an all-out nuclear holocaust in the absence of effective arms control and disarmament agreements. Second is the gradual, at times almost impercep-



tible, evolution of the Soviet Union toward what we might call normal behavior. Third, the continuing development and growth of two powerful forces for peace—the Atlantic community and the United Nations—is a hopeful factor. I am aware, of course, as you are, that the Atlantic community stands in some disarray at this moment in time. I do not believe for one moment, however, that the continued growth of this community, which gained its impetus in the late 40's with the advent of the Marshall Plan, can be stopped. I do believe that the tide of history is inevitable; this irritant will pass and others will come, but the community will grow stronger, more prosperous, and closer. And finally,—fourth among the factors—there do exist certain evident, and common, interests of the Western and Communist world. For obvious and natural reasons, each side shows a mutual concern in avoiding general war, and in developing a higher standard of living for its people."

A few more details concerning **Herbert Foster Jermain**, whose death on March 25 was reported last month, have reached us. He served as a naval aviator in World War I, was a member of the A.I.E.E., and retired as consulting electrical engineer. He is survived by two sons and seven grandchildren. . . . Much too belatedly news has reached us of **Paul H. Howard's** death on January 4. He served in the Boston Navy Yard during the first war and had long been president and treasurer of the Weymouth Art Leather Company. He will be missed at reunion. —**F. Alexander Magoun**, Secretary, Jafrey Center, N.H.

## '19

Your secretary attended the dinner given at the Waldorf on May 7 to celebrate the happy occasion of the completion of the Second Century Fund for M.I.T. with a total of \$98 million. Other members of the Class of 1919 whom I saw were: Bill Banks, Jack Fleckenstein, Russ Palmer, Larry Riegel, Earl Stevenson and Leo Kelley. . . . **Jack Fleckenstein** has retired from active business in Michigan. One of his daughters is studying further at college. . . . **Bill Banks** is in New Hampshire and seems pretty spry and active in his business. . . . **Leo Kelley** is still very busy with his patent suits and looks well. . . . **Earl Stevenson** has resigned as chairman of the Industrial Applications Advisory Committee of the National Aeronautics and Space Administration, due to the demands of other responsibilities. He was responsible for the organization of this committee and getting its work under way.

Notice has been received of the death of **Mason S. Noyes**, of Washington, Ind., on September 26, 1962. New addresses are: **George A. Inglis**, from Newton Center to 2025 Pine Ridge Drive, Clearwater, Fla.; **Frank P. Reynolds**, from Venice, Fla., to 1057 Main Street, Walpole, Mass.; Colonel **William H. Bassett**, from Scarsdale, N. Y., to R.F.D. #2, Wilton, N. H.; **Roger M. Leland**, from Wellesley

Hills to 65 Charles River Street, Needham 92, Mass.—**Eugene R. Smoley**, Secretary, 30 School Lane, Scarsdale, N.Y.

## '20

Even though our 45th Reunion is still a couple of years away, plans for its successful culmination are already in the making. Since this is, of necessity, written prior to Alumni Day, we cannot report on the meeting that Reunion Chairman **Frank Bradley** will be holding on that date for purposes of advance discussion and planning. But, knowing Frank, we predict that substantial progress was made as to formation of his reunion committee, consideration of the most suitable locale, and other details. The question of whether to adhere to our time honored policy of classmates only or whether to do as most other classes do and include wives or even families no doubt came in for some lively discussion. Your opinion on this counts just as much as the next fellow's, so if you would like to express your views pro or con, do drop me a line and I will see that it is given due consideration by the reunion committee. Also, if there are certain classmates that you particularly want to enjoy a visit with at the 45th, appoint yourself a committee-of-one to get in touch with them and urge their attendance. We know from past experience that our successful and happy reunions have been the result of the loyalty, interest and effort of us all, not just a few. Questions, comments or suggestions will be gratefully received.

Word has reached us of the death, on March 9, of **John Grilli**. John had been a divisional director of H. K. Ferguson Company, Cleveland. His home was at 15801 Stillwood Avenue, Cleveland. Those of you who knew him best may wish to extend a word of condolence to Mrs. Grilli at that address. . . . Another beloved classmate whose death we regretfully report is **Bob Pender**. Bob made his home in Lynn, Mass. He operated his own company in that city. Mrs. Pender survives him.

A news release from Dorr-Oliver, Inc., Stamford, Conn., reports that **Jack Lucas**, who has been director of project engineering for that company, will continue on a part time basis. They state that under Jack's guidance this area of the company's operations has assumed substantial importance. Prior to his association with that company he had acquired extensive experience in large government and industrial plant design and construction. Jack and Mrs. Lucas live on Cloverly Circle, East Norwalk. He expects to be able to devote more time to his hobby which is the cultivation of rare orchids—in common with **Nero Wolfe**, eh, Jack? . . . **Fred Crapo** is in Muncie, Ind., at 4300 West Jackson Drive. **Eric Etherington** has moved from Ridgewood, N. J., to 655 Doremus Avenue, Glen Rock, same state. **Harold Hunter** is in Rome, Ga. **Frank Maconi** has moved from Framingham, Mass., to Holliston. Frank is an active member of the M.I.T.

128 Club and Boston Luncheon Club. **Dan Whelan** is living in Pacific Palisades, Calif. at 15318 De Pauw Street.—**Harold Bugbee**, Secretary, 21 Everell Road, Winchester, Mass.

## '21

This issue of The Review concludes the current volume, and we hope you have already added your support to the Amity Fund in order that your subscription will continue through the next volume, starting with the first number in November. At that time, we will recount the doings of the Class of 1921 at last month's Alumni Day, plus whatever news you send us during the summer about yourself, your travels, your grandchildren or other important details of your busy life. Take a couple of minutes now to write to your secretaries.

One of the most pleasant occurrences of the past month was a visit from **Dug** and **Betty Jackson**, who arrived in Glen Ridge late one afternoon and stayed overnight. They were on their way back from Boston to their home in Havre de Grace, Md. Maxine and your secretary enjoyed another opportunity to reminisce over the many happy occasions we have shared in the past with this active couple. We have also had several opportunities to visit with **Munnie** and **Alex Hawes** at their home in Sea Girt, N. J. Alex chairmaned a gorgeous flower show, held in the old Governor's Mansion in Sea Girt, as one of the preliminary activities on the extensive program to celebrate the Tercentenary of the State of New Jersey. Maxine and your secretary can add the following item: the Congregational Church in Glen Ridge, N. J., was the scene of the wedding on April 13, 1963, of Marie L. Harris, daughter of Dr. Nelson Harris of East Orange, N. J., and the late Mrs. Harris, and Alfred L. Clarke, son of Mr. and Mrs. **Carole A. Clarke** of Glen Ridge. The bride received the B. S. degree from Newark State College and a master's degree in education from Temple University. She is a teacher in the Glen Ridge School system. Alfred obtained his bachelor of science degree from the Wharton School of Finance and Commerce of the University of Pennsylvania, where he was a member of Sigma Phi Epsilon and manager of the cross country team. He is associated with Tab Products Company. The young couple live in Montclair, N.J.

**Samuel E. Lunden**, Fellow of the American Institute of Architects and a member of the Los Angeles architectural and planning firm of Lunden and Johnson, has been honored as the recipient of the Edward C. Kemper Award of the A.I.A. The award is made annually to the member who has made significant contributions to the profession and to the institute. Sam is a member and former president of the Southern California chapter and a past national vice-president of the A.I.A., as well as a past president of the M.I.T. Club of Southern California. He has also been active in Town



Hall, a Los Angeles civic organization, and has served as chairman of its regional planning and development section. He received the Town Hall Award in 1960. The newest honor was bestowed on Sam at the May national convention of the A.I.A. in Miami. . . . **Sumner Hayward** and **Joe Wenick** received the top alumnus award of the M.I.T. Club of Northern New Jersey at the annual dinner meeting in May. . . . The National Aeronautics and Space Administration has announced the appointment of **Dr. Augustus B. Kinzel**, Vice-president for Research of Union Carbide Corporation, as a member of the Industrial Applications Advisory Committee of NASA. This committee aids a program of making the results of aerospace research available to industry.

**Ralph M. Shaw's** prompt response to the recent 1921 broadcast from Class President **Ray St. Laurent**, got him under the wire ahead of the field in stating his views on the proposed interim class reunion in the spring of 1964 or 1965. Rufe says, in part: "Let me be the first to write in answer to Ray's letter of April 10 and say that I think it would be swell to have a mid-term reunion at some glamorous spot. Spain is swell, but as cold in March as New York. The same applies to Tokyo. But why not Hawaii or Puerto Rico? I'll cast my vote for either of these or for a repeat trip to Mexico. I have just come back from a trip around the world—my third. We left Philadelphia on last December 29 to see the Rose Bowl football game. Unfortunately, I contracted a pneumococcus bug on December 31, got a shot of penicillin and spent New Year's Day in bed, watching the game over television. Was back on deck on January 2 and hopped off for Hawaii on January 3. We kept on going, via Australia and New Zealand and took off from Lisbon for Miami on March 6. We spent three weeks in Florida and got home on April 1, in time to pay my income tax. I am glad I went. I am not getting any younger and soon I will be too infirm to bat around like a schoolboy." With the thickest thatch of dark hair, untouched by gray, of anyone in the class, it's difficult to picture Rufe as anything but the active figure he is.

**Edward M. Eptridge** says his home address is 518 Rothbury Road, Woodbrook, Wilmington 3, Del. . . . Visitors to Georgia shouldn't fail to stop and see **Ed** and **Helen Farrand** at their new home, Kinchafoonee Lodge in Leesburg. . . . **John J. McCloskey** reports his mail should now be addressed to Blue Eagle Inn, 2 Grove Street, Whitinsville, Mass. . . . **George** and **Anne Schnitzler** have commuted back to 11 Short Street, Brookline 46, Mass., after their winter sojourn in Miami Beach, Fla. . . . **George B. Wetherbee** has retired and has left Portland, Maine, for a new home at 2645 Covington Place, Birmingham, Mich. . . . **Abram E. Watov** is chief of standards and specifications in the New Jersey State Division of Purchase and Property at the State House, Trenton, and a lecturer in industrial management at Rider College. He lives at 1105 W. State Street, Trenton. Son Richard, who

attended Duke University, is married. . . . **Douglas Weatherston**, 435 Sheraton Drive, San Antonio, Texas, heads his own firm as an independent petroleum geologist. He has a married son, George, and four grandchildren. . . . **Herbert K. Nock** makes his retirement home at 1376 S. E. 14th Street, Pompano Beach, Fla. . . . **Robert A. Eckles** heads the architectural firm of W. G. Eckles Company, New Castle, Pa. He has two children and four grandchildren.

We record with profound sorrow the loss of three members of the Class of 1921 and express to their families our heartfelt sympathy on behalf of the entire class. **Ernest Axel Pearson** of Island Park Road, Ipswich, Mass., passed away suddenly on January 1, 1963, while on his way home from a hockey game. A native of East Lynn, Mass., he entered the Institute with us in our freshman year and was a member of Course V. During World War I, he was a private in the S.A.T.C. at Technology. For over 30 years, he had been associated with the Springfield Body Division of Teco International in Cambridge, Mass., and its predecessor companies, advancing through various capacities to become general manager.

**Lewis Stearns Edgerton** of 52 Centre Street, Nantucket, Mass., died on February 20, 1963. Born in Fulton, N.Y., on April 12, 1897, he prepared for Technology at Fulton High School and Rindge Technical School in Cambridge. At the Institute, he was a member of the Mechanical Engineering Society; he received the bachelor's degree with us in Course XV. He taught engineering subjects at Mechanics Institute and the University of Rochester, Rochester, N.Y., and was secretary of the General Gas Furnace Company, Rochester, prior to organizing the consulting architect-engineer firm of Edgerton and Edgerton in Syracuse, N.Y. In 1948, he had founded the Colonial Craft Shop on Nantucket Island to preserve the local architecture and construction. Besides providing a source for authentic reproductions, the shop carried out major projects, such as the remodeling of Nantucket's Old North Vestry. His Centre Street home dated back to 1756. He was a member of the American Society of Mechanical Engineers and a past secretary-treasurer of the Syracuse Section, a Scottish Rite Shriner, active in Rotary, a member of the board of trustees of Plymouth Congregational Church and on the finance committee of the Syracuse Council of Churches. He is survived by his wife, the former Mildred G. Coffin of Nantucket and Rochester; a daughter, Priscilla, Cornell, '46, of Bay Village, Ohio, the wife of Warren R. Whalley, M.I.T. '53; and two granddaughters.

**Harrison Hume Mosher** passed away on April 18, 1963, at his home, 545 Madison Avenue, S.E., Grand Rapids, Mich. Born in Portland, Maine, he was graduated from Harvard in 1919 with the S.B. degree and joined us in Course XV in the junior year, following service during World War I as a captain in Army intelligence. He had been an industrial engineer with the Walworth Company and

general manager of R. A. Fife Corporation of Mamaroneck, N. Y., before going to the American Seating Company in Grand Rapids, where he had been merchandising manager for 28 years prior to his retirement in 1960. He was a member of the Peninsular Club of Grand Rapids and the Harvard Club of New York City. Surviving are his wife, Helen; a son, Harrison H., Jr., of Cambridge, Mass.; a brother, Thomas, of Detroit, and two grandsons. It was our great pleasure to be royally entertained by Harrison and Mrs. Mosher last summer in Grand Rapids and to find out how actively he was enjoying the private consulting work and do-it-yourself chores which completely filled his retirement days. He had warm recollections of **Ernie Henderson**, **Dug Jackson** and **Dave Woodbury** in his same class at Harvard.

1921 Calendar: Interim reunion in the spring of 1964 or 1965; write to your secretaries and state your preference as to when and where; Alumni Day on June 8, 1964; 45th Reunion on June 9 through 12, 1966, followed by Alumni Day on June 13. For the coming months of this year, all your class officers and committee chairmen join in wishing you and yours a most pleasant and enjoyable summer.—**Carole A. Clarke**, Secretary, c/o International Electric Corporation, Route 17 and Garden State Parkway, Paramus, N.J.; **Edwin T. Steffian**, Assistant Secretary, c/o Edwin T. Steffian and Associates, 376 Boylston Street, Boston 16, Mass.

## '22

During the absence of your secretary, who is on a tour of the Orient, your assistant secretary will do the honors for this month. When Whit returns, he will have much to write about the beautiful, bustling, strange places he has visited in Japan, Hong Kong and Hawaii. The next report should prove to be most interesting. **Whit Ferguson** has been selected as Niagara Frontier Business Man of the Year by the University of Buffalo School of Business Administration. He has recently been appointed to the Board of Regents of Canisius College, a rapidly expanding private university in Buffalo, N.Y. Iowa State University, of which Whit is an alumnus, has named him the 1963 recipient of an Iowa State award in recognition of outstanding achievement in engineering. At Webber College, Babson Park, Fla., Whit gave the baccalaureate address to the 1963 graduating class and received the honorary degree of Doctor of Science. We offer our congratulations to our absent secretary.

Your assistant secretary has just returned home after having shown his M.I.T. film "The Social Beaver" in Johannesburg, South Africa; Bombay, India; Colombo, Ceylon; Singapore; Sydney and Melbourne, Australia; and finally at Auckland, New Zealand. The audiences were M.I.T. Alumni, college faculty and engineering students at three universities. . . . On our way home Mary and I visited Catherine and **Horace McCurdy**

at their home on Lake Washington in Seattle. Anchored at a pier back of the house was Horace's 90-foot "vessel" which is his pride and joy. Although he has a crew of two, Horace operates the ship himself. The McCurdys are wonderful hosts.

**Harvey L. Williams**, expert on international financing and business management, received the Legion of Honor medal and citation on March 8 at the French Consulate. The Consul General and Madame Pierre Gabard entertained at a champagne reception after the honor was conferred. Harvey acted as consultant to Howard C. Petersen, President of the Fidelity Philadelphia Trust Company in the formation of the newly established Edge Act Corporation which will deal in international finance. He is a former president of Philco International and an active member of the International Chamber of Commerce. . . . **Charles Kerr, Jr.** of Westinghouse Electric Corporation has been closely affiliated with the corporation's transportation engineers in developing a new concept in transportation for metropolitan areas of medium population density. This is known as the Transit Expressway system in which service is of uniform quality at all times and also instantly available at all times. . . . **Edward C. Keane**, of Fay, Spofford and Thorndike and a member of the Boston Society of Civil Engineers has written a most interesting article for guiding specification writers working within the framework of a set of standard specifications published by a state highway department, as well as contract documents prepared for a private client.

We regret to report that **Max J. Steinberg**, division engineer for Consolidated Edison, passed away on April 10. He was an adjunct professor of economics at Brooklyn Polytechnic Institute, having joined the faculty in 1941 as an adjunct professor of mechanical engineering. The sympathy of the class is extended to Mrs. Steinberg and his family. . . . Our sincere apologies to **Frederick S. Blackall, Jr.** for confusing him with his son **F. Steele Blackall, 3d.** It is the son, **F. Steele Blackall, 3d.**, who has become president of Taft Peirce Manufacturing Company. Fred is chairman of the board. . . . **Parke Appel** writes that he and Madeline spent a sociable and interesting evening with Dr. John Wulff and Mrs. Wulff and Dean and Mrs. Gordon S. Brown, '31. Our class can be very proud of the establishment of this professorship and particularly of Dr. Wulff and his activities at M.I.T. Parke is asking for our generous support of the Alumni Fund, and in making our gift, to designate it for the Class of 1922 Professorship.

Among the change of addresses are: **J. Robert Wolf**, Carmel, Calif.; **Jerome Meier**, West Orange, N.J.; **Dr. Leon S. Medalia**, Greenbush, Mass.; **Colonel Elroy S. J. Irvine**, Coronado, Calif.; **Charles A. Chase**, Castine, Maine; **Douglas M. Burckett**, South Lincoln, Mass.; **Howard B. Upham**, Pompano Beach, Fla.; **C. Harald Sebenius**, Pasadena, Calif.; **Seward W. Livermore**, Washington, D.C.; **J. Cecil Aronson**, Winter Park, Fla. . . .

The sympathy of the class is extended to the families of **William F. Driscoll** of Belmont, Mass.; and **William T. Dunlap, Jr.**, of Hickory, N.C.—**Oscar H. Horowitz**, Assistant Secretary, 33 Island Street, Boston 19, Mass.; **Whitworth Ferguson**, Secretary, 333 Ellicott Street, Buffalo 3, N.Y.

## '23

This will be my last note as secretary of your class. The last five years, handling your notices and correspondence, have been pleasant ones; in fact, my secretary Miss Nan O'Sullivan, says she is going to miss all these interesting news notes, and I guess I will too. By the time you read these notes our 40th Reunion at Chatham Bars Inn and the Institute will be a pleasant memory. However as my final official act as your secretary I will prepare and send to you a suitable report on our 40th Reunion. . . . Announcement was made in May that the National Research Corporation of Cambridge, of which **Hugh S. Ferguson** is president, will merge into the Norton Company of Worcester. Hugh will retain presidency of the subsidiary and also become a member of the Board of the Norton Company. . . . **Ed McSweeney**, founder of Edward McSweeney Associates and management consultant to many progressive printers throughout the country, had an interesting article in the April issue of *Inland Printer* entitled—"How Two Years of Sales Calls Paid off" and one in the April issue of *New England Printer and Lithographer* discussing "The Urge to Merge." . . . **Bob Hull** retired on May 1. Bob has been president of the Cities Service Oil Company, Ltd. and Cities Service Refining, Ltd. He has had 40 years of service with Cities Service in both Canada and the United States.

We regret to report the death of **Walter S. Marder**, who was killed in a plane crash in Japan on May 1. Walter was treasurer and assistant to the president of the LA-Z-Boy Chair Company of Monroe, Mich. He and Mrs. Marder were on a combined business and pleasure trip to Japan. Walter was on an air trip to Tokushima on Shikoku Island to visit a furniture factory when the plane crashed into a mountain on Awaji Island, 40 miles west of Osaka. Mrs. Marder was not on this flight with him. An enthusiastic golfer, Walter was a member and director of the Monroe Golf and Country Club. He joined the Monroe Exchange Club shortly after going to Monroe and was installed as president of the club in 1961. He was appointed to the Monroe Planning Commission in 1956, when it was formed by the Monroe City Commission, and was elected its first chairman. He served on the commission until resigning December 9, 1959. He was elected president of the National Association of Furniture Manufacturers in 1954 and became a director of the Furniture Club at Chicago. Walter was also a member of the Market Dates Committee and the Home Furnishings Industry Committee with headquarters at the American Fur-

niture Mart at Chicago, Illinois.

We wish to report the following address changes: **Alan R. Allen**, 6 Hollywood Drive, Birchwood Park, N.Y.; **Dr. Per K. Frolich**, Apts 615-616, 200 River Towers Drive, Alexandria, Va.; **Phillip H. Hardie**, Tata Power Company, 24 Bruce Street, Fort, Bombay, India; **Joseph Nissen**, 91 Hoitt Road, Belmont 78, Mass.; **Herman F. Pike**, Norwood Farms Road, York Harbor, Maine; **William R. Tayler**, The Tayler Corporation, 32 West Scott Place, Elizabeth, N.J.; **Walter W. Zapolski**, R.F.D., Gouldsboro, Maine.—**Herbert L. Hayden**, Secretary, E. I. du Pont de Nemours and Company, Leominster, Mass.; **Albert S. Redway**, Assistant Secretary, 17 Old Orchard Road, North Haven, Conn.

## '24

Well, the big Victory Dinner at the Waldorf on May 7 was quite an affair. You undoubtedly read about it in the papers the next day, or if not you have seen that \$98 million detailed here in *The Review*. The main ballroom was filled, and there was a 3-tier head table. Our class was well represented. We had 29 in all. **Ed Hanley** and **Charlie Thomas**, as befitted members of the Corporation, were at the head table. So was **Luis Ferre**. He and Candelario Calor Mota came up from Puerto Rico especially for the dinner. **Phil Bates** was there from California. He had been able to work this in with a business trip. And our other long distance traveler was **Joe Mares** from Houston. If there is a question about who gets the prize for greatest distance, there certainly is none about the shortest. **Jack Hennessy** lives just a step down Park Avenue from the Waldorf. After the dinner a little group of the socially minded repaired to the Bull and Bear bar. A gay group seated at a nearby table included **Tom Coogan**. Those of you who were at our 35th will remember that Tom has a summer place right next door to the Oyster Harbors Club. When he heard that we would be returning there next year for our 40th, Tom immediately suggested that he throw a cocktail party for us sometime during the festivities. And **Cy Duevel**, newly appointed reunion chairman, took him up on the offer without further ado.

Sometime last year we mentioned that **Clarence Redden** had been touring the Institute with his daughter, Martha, who was contemplating applying for admission. She did, she was accepted, she accepted in return, and this fall will be living in the brand new Women's Dormitory. At the moment she is most interested in nutrition and food technology. By the way, Martha chose M.I.T. over Wellesley, Wheaton, and Pembroke, where she was also accepted. . . . South America seems to be the popular spot for our traveling classmates this year. First there were the **Carroll Dunns**, then the **Ray Lehrers**, and now comes a card from Emily and Earle Bates in Rio. Even in the middle of such a jaunt, they haven't forgotten the big event of next year:



"Emily and I are here for a little trip. We'll see you next year about this time." . . . As president of the American Academy of Arts and Sciences, **Hudson Hoagland** is on the banquet circuit a good bit of the time. Although he has had mention many times in these columns, his principal fields of interest have never been detailed. A recent report of a speech on behavior and survival in the nuclear age to a World Federalists group stated: "A prolific writer in the areas of neurophysiology, adrenal physiology, and biochemical aspects of schizophrenia. . . ." So now you know.

**Harold Hazen** also gets about a bit. In April he represented M.I.T. at the 100th anniversary of the University of Massachusetts. That's not much of a trip, but in May he performed the same task at the first centennial celebration of Robert College in Istanbul. You will remember Harold was acting president there a couple of years ago, and is still a trustee. . . . On graduation **Si Kirshen** entered public service in Massachusetts, first with the Metropolitan District Commission, then with the Department of Public Works as a civil engineer. In 1960 he retired and opened his own consulting engineering office in Boston. This just came to light with publication of an article by Si on "Bridge Specifications" where he was identified as a consultant. . . . **D. Arthur Straight**, a graduate of Amherst, got his master's degree with us in chemical engineering. For many years he was in personnel work in New York and was very active in the M.I.T. Club of Northern New Jersey. Ten years ago, his outside activities came to an end. He has been confined to a wheelchair on the second floor of his home in East Orange ever since. However, in spite of physical limitations, he still carries on his own business in management and personnel relations. . . . So ends another year. And this time there will be no plea for picture postcards of your summer touring, although they will be most welcome. Hopefully, the response to that questionnaire Ray Lehrer sent out should keep your secretary well supplied with tasty bits of information for some time to come. If you haven't returned yours yet, do! A pleasant summer to you and all, and we'll meet again in the fall.—**Henry B. Kane**, Secretary, Room 1-272, M.I.T., Cambridge 39, Mass.

## '25

It is with the deepest regrets that I announce the death on January 29, 1963, of **Agustin M. Valdes** in Mexico City. Death came from a heart ailment. Through the kindness of "Nish" Cornish, '24, and Conchita Lobdell, I have been supplied with information regarding Gus which I am sure will be of interest to all of the members of the class. He was one of M.I.T.'s staunchest Alumni in Mexico and was very close to Lobby and Conchita during the last few weeks they spent in Cuernavaca. The Lobdells spent their last three days in Mexico at the

Valdes house; and on Monday, October 8, Gus took Lobby directly to the side of the plane in his car for his trip to Houston, having also arranged for his arrival at the Methodist Hospital there. Gus attended M.I.T. with our class, taking civil engineering, and then received his civil engineering degree from the National University of Mexico, where he taught mathematics for nine years.

He initiated and was first president of the American Society of Civil Engineers in Mexico, in which group he continued to be very active and helpful. He was promoter of the American Caritas Society and president of the local chapter. From the time of the 1948 reorganization of the M.I.T. Club of Mexico City, he was a very enthusiastic and energetic member. Many reunions and social gatherings of the local club were held at his home. Many M.I.T. faculty and M.I.T. alumni visitors have enjoyed the wonderful hospitality that he and his beautiful wife, Olga, extended to all of them during the events of the now traditional Annual M.I.T. Fiesta in Mexico held every March. He has been considered one of the columns of the M.I.T. Club of Mexico City, having served as treasurer for a number of years and was always most active in planning and organizing. He was a member of the University Club, the Bankers' Club, and the Country Club of Mexico City. He and his wife Olga are well-known and loved by all of the M.I.T. Alumni who have visited Mexico. At the time of his death, he was a director of public works for the Valley of Mexico of the Ministry of Water Resources, and owner of an important construction company bearing his name, operating on public works contracts.

I have also to announce the death of **John R. Lyons** in St. Albans, N.Y., on February 20, 1963. There are no details regarding his passing. . . . Chick Kane, '24, has supplied me with information regarding **Alec Ulmann**. His associations are rather numerous. His headquarters are at 230 Park Avenue, New York City; and among his various projects are, of course, the Automobile Racing Club of Florida, Inc., of which he is the president. In this position, he was organizer of the Sebring 12-hour Grand Prix competition. He is also president of Allied International Corporation, U. S. and Canadian representatives for BMW Triebwerkbau, G. M. B. H. Gas Turbines; and, finally, he is director of the International Department of Greer Hydraulics, Inc. of Los Angeles and Westbury, Long Island, N.Y. . . . Finally, from the Boston Herald of May 15, 1963, comes the announcement that **Ralph Gow**, President of the Norton Company in Worcester, Mass., has just been named to the board of directors of the Boston Safe Deposit and Trust Company.—**F. L. Foster**, Secretary, Room 5-105, M.I.T., Cambridge 39.

## '26

About a year ago **Pink Salmon** sent me a clipping from the "Wall Street Journal" that for some reason never got into the

notes. As I have mentioned before, the Class News is not like the newspaper, and an item a year old or five years old can still be news if you haven't heard it before. The original news item states: "Joy Manufacturing Company has elected **James A. Drain** president, director and a member of the executive committee. He is a former vice-president and general manager of the company's mining and construction division." As many of you know, Jim left Joy a few years ago to become vice-president of H. K. Porter Company. From the record it appears that his guidance was missed, hence the call back to run the show. Now a year later, Pink has sent me Joy's Annual Report and fourth quarterly statement which shows a 65 per cent increase in net income compared with a year previous. Jim's fine hand seems to be working already, and the annual report outlines meaningful plans for the future. The only thing I did not like in the report was Jim's photograph; it looks as though he were talking out of the side of his mouth. As one of the best looking guys in our class we think he should call in Karsh of Ottawa (formerly of Boston) for his next photo! . . . Here's an item from the "Hartford Times" about a classmate we have not heard from in years so let's catch up on him: "**Roland P. Stowers** has been named manager of the cooler department by Whitlock Manufacturing Company, West Hartford. He will be in charge of the sales program involving standard heat exchangers applied to cooling problems. Following his graduation from M.I.T. he worked in thermal design engineering and research for chemical and heat exchanger manufacturers. During World War II he was a heat exchanger procurement specialist on loan to E. B. Badger and Sons Company, petroleum refinery engineers and contractors for major, world-wide oil projects. Formerly of East Greenwich, R.I., he will live now in West Hartford."

This week at the joint meeting of the Rubber Divisions of the American and Canadian Chemical Societies I spotted a face that seemed to have significance beyond the Chemical Society. I maneuvered into position so I could read his badge (which I find increasingly difficult with bifocals) and sure enough it read **C. R. Washburn**. I baffled him a while by covering my own badge with my hand. Curt is with Goodyear Tire and Rubber Company in Akron as manager of process development. It developed that he had started at Goodyear after graduation with another good friend, Jack Fielding, '25, who is vice-president of the Armstrong Rubber Company. Jack was at Toronto also and during the cocktail hour while talking with Curt, Jack and Mrs. Fielding, it developed that the Fieldings read the Class of '26 Notes too. Welcome to the fold, Jack and Florence. One of the outstanding events at the meeting was the awarding of the Charles Goodyear Medal, which this year was bestowed upon one of the top research men in **Dave Shepard's** outfit, Dr. W. B. Sparks, co-inventor of butyl rubber. Bill Sparks is not an M.I.T. man himself but at a private cocktail party before the



award banquet I met Bill's two sons who had flown in for the occasion. Son Charles just graduated from the Institute in biology and is headed for medical school. Son John is still in high school and when I asked where he would like to go it developed that M.I.T. is at the top of his list too.

Dave called me earlier in the week, just before leaving for his London assignment to give me the word on the appointment of our Special Gifts Chairman for the 40th Reunion. Dave, Pink and I have been having discussions about this, and we all agreed upon the man. It was up to Dave to make the contact and he reports acceptance by **I. Austin Kelly, 3d**. The 40th Reunion Gift is the most important of all. By 40 years we should be at the peak of our affluence and let's face it, there will be more of us around then than at our 50th. But I must not start stealing Austin's punch lines; he has a big job ahead and the class is mighty fortunate that he has agreed to take it on. . . . One final bit of news is covered in the following announcement. "Mr. and Mrs. **Daniel J. Bloomberg** request the honour of your presence at the marriage of their daughter, Jeanne Olave Prescott to Mr. William Logan Orcutt on Saturday, the twenty-seventh of April at eight o'clock in the evening All Saints Episcopal Church, Beverly Hills, California." I wrote Dan our regrets while we were vacationing in Nassau. Had we not planned a Bahamas holiday the temptation would have been great to attend the wedding, especially since the reception was held at Dan's beautiful home in Encino which we visited a few years ago. . . . It appears that we are running out of space and I haven't even mentioned that I am writing the notes on a Sunday morning at Pigeon Cove, but that is the case. We will be here all summer and expect those of you who find yourselves in New England this summer will drive down to the end of Chapel Lane to say "hello." And those of you who do not will drop us a note telling of your activities so we will have something to start telling the class in the fall issue. Till then, Cheerio.—**George W. Smith**, Secretary, E. I. duPont de Nemours and Company, 140 Federal Street, Boston, Mass.

# '27

Well, now we can say that we have reported everything in this column. **Francis T. Cahill** of 75 Pleasant Street, Revere, Mass., and a 1927 architect, has won first prize of \$140,000 in the Irish Sweeps on a 66-to-1 shot horse. "Sailor," as he was known in school, only recently retired from the Navy Yard, where he had worked since 1938. He held the ticket with his wife, Margaret, who has been buying sweepstakes tickets from relatives in Ireland for the past 10 years. So a trip to Ireland is scheduled by the Cahills. And there will be things to do for their 5 children and 17 grandchildren. Plus a new car, and part for Old Uncle Sam. Nice going, Sailor! . . . An important book, "Operational Economics of Elec-

tric Utilities" has been written by **Constantine Bary** and published by the Columbia University Press. The jacket says of the book: "It describes concisely the general concepts underlying the utilities' cost of rendering services, the revenues derived through prices reflected in rate schedules, and the techniques employed in evaluating alternative plans to satisfy economically the requirements of service supply. The author presents one general and unified theory, which comprises the methods, principles, and procedures developed over 30 years in the study and determination of the most probable incidence of cost for electric utility services and in the design of equitable and compensatory rates for them. He appraises the economic impacts of now foreseeable developments in the fields of production, transmission, and distribution of electric services by utilities and describes important techniques for evaluating the economic significance of possible alternatives in the operation of such enterprises." Connie, who was in Course VI, is director of economic, cost and rate analysis for Philadelphia Electric Company, with which he has been associated since graduation. He has held offices in the M.I.T. Club of Philadelphia and in many professional organizations, and has been a consultant to the U. S. government. The "Bary Curve" established the relationship between coincidence factors and load factors of electric services.

**Frederick J. Hooven**, Course IX-B, has been appointed director of the research planning office of the Ford Motor Company. Fritz was an independent inventor and consulting engineer for 18 years before joining Ford in 1956, and is credited with more than 50 patents on aircraft, automotive and electronic devices, including the first automatic direction finder for aircraft and a precision, radar bombing system used by the U. S. Air Force during World War II. He also developed a number of psycho-physiological testing devices and collaborated on the development of a heart-lung machine. He and his wife live at 910 Sunningdale Drive, Bloomfield Hills, Mich. . . . Last year **Bob Wallace** moved from Cleveland to Lansing, Mich., as director of engineering, Lansing Division, the White Motor Company. Bob has checked in to say that he and his wife are well acclimated to the new spot and are enjoying it thoroughly. . . . **Larry Grew** has been commended by the board of education of North Haven, Conn., for his distinguished service for more than 25 years as a member of the board and for his chairmanship for the past 14 years, providing "outstanding leadership and effective guidance." He is transmission and outside engineer of Snetco (Southern New England Telephone Company, for those of you who are not fortunate enough to live in southern New England.) Larry started with them in 1928.

I still could use that Gray Book and the 1925 and 1926 "Techniques." Search your attics. . . . Colonel Myron E. Doucette, '25, who was reading the 1927 notes, happened to see the plea and sent on a 1924 "Technique," for which I am grateful. He has retired, is a radio ham,

airplane pilot and "sailor"; lives at Seatauket, L.I. . . . I hope that you all noticed that **Louis B. Peterson** was on the annual M.I.T. ballot for a three-year term on the National Nominating Committee. He has been president of the M.I.T. Club of the Virginia Peninsula, and is purchasing agent of Newport News Shipbuilding and Dry Dock Company, Newport News, Va. . . . **Glenn Jackson** has had a disappointment in that the Wianno Club, after saying O.K. to having our 40th there, now says that there was a prior booking by a member. **Dike Arnold** is helping to work out the problem. . . . New addresses received: **John E. Gill**, 127 Woodridge Road, Wayland, Mass.; **Sumner H. Gross**, Frontier Press Distributing Company, 44 West 63rd Street, New York 63, N. Y.; Captain **Henry A. Ingram**, 24 Water Street, Hingham, Mass.—**Joseph S. Harris**, Secretary, Masons Island, Mystic, Connecticut.

# '28

Although these notes will be in print following our 35th Reunion, they are being written several weeks prior to the event. Since The Review is not published for August, September, and October, a report on the big weekend activities will not appear until the November issue reaches you. In the meantime, we are still receiving letters and notes, mostly in relation to the reunion. These missives were addressed to **Jim Donovan** in most cases. . . . **Mariano Contreras** wrote from Caracas, Venezuela, and expressed his intention to be on hand at Harwichport, probably with his wife. His last meeting with the class was at the 25th held on campus at the Institute. . . . **John Houpis**, who is a staff member of the R&D Directorate of the U.S. Army Electronics Command, has been assigned to business that will take him out of the country at a time that eliminates any chance of his attending the reunion. This was a sharp disappointment to him—he had written earlier with enthusiasm of looking forward to seeing his old friends again. . . . Several classmates, who either live at the Cape or have summer homes there, have indicated intentions of attending all of the reunion functions but sleeping in their own beds at home. This sounds like a very nice arrangement to us. Furthermore, it should help relieve pressure on room accommodations if registration comes up to the committee's present estimates.

Another world traveler and enthusiastic reunioner is **Lazare Gelin**. He wrote from New Delhi to express his intention of making it back to the States in time for the big weekend party. While in Bangkok, he met Perm Limpivasthi, '20, who is now managing Thai Airlines. Perm was also planning a trip to Cambridge to attend his son's graduation at the Institute in June. . . . **Paul Johnson**, who has made his home in Hawaii since about 1938, wrote Jim a brief note indicating that St. Louis is his present location. The Johnsons are very enthusiastic about the re-

union and looking forward to the occasion. . . . **Dave Donovan** reported that he has been ill and in the hospital for a month. On this account he was somewhat unsure of getting to Harwichport. We certainly hope he recovers in time to make it! . . . Others who sent notes in with their registration cards are Al Knight, Jim Willett, Newton Foster, and Ed Pitt.

We regret to report that **David W. Crawford**, XV, died early this year. This information has only just now reached us. David's recent address was 1514 Jackson Street, Scranton, Pa. . . . In last month's notes we reported briefly upon the death of **Ermanno Basilio**. We have received additional information in a letter from his wife, Iris, to **Ralph Joep**. Ermanno was chief metallurgist at General Railway Signal Company, Rochester, N.Y.; he joined the company in 1937. Before that he was with General Electric Company at Pittsfield, Mass. Ermanno was born in Quincy, Mass., graduated from the Institute in Course XIV, and received his S.M. degree in 1929. In addition to his M.I.T. affiliation, he was a member of the Metals Engineering Institute of the American Society for Metals and a member of the Fellowship Club at General Railway. Death was due to a heart attack and complications. His family includes a daughter, Mrs. Albert Gold, and a son, E. Anthony Basilio.—**Walter J. Smith**, Assistant Secretary, 15 Acorn Park, Cambridge, Mass.

## '30

This month's notes are being written on board the Burlington California Zephyr westbound for San Francisco, where the **Listers** are going on a West Coast vacation. We had a spectacular ride across the continental divide this morning and are looking forward to the trip through the Sierras' Feather River Canyon tomorrow morning. The Zephyr lives up to its advance billing. . . . I had pleasant chats at the Second Century Fund New York dinner on May 7 with Al Burling, Joe Harrington, Ed Nolan, Tony Savina, Greg Smith, George Wadsworth and Dick Wilson. A number of other classmates were on the seating list but I was not able to find them. . . . **H. H. Scott**, Inc. was in the news again recently as the subject of an article in the March 16 issue of "Business Week." As many of you know, Scott's company is a top-flight producer of quality hi-fi components. One rather intriguing item in the article was the statement that he got "straight A's while attaining an engineering degree at M.I.T." Scott was recently elected a trustee of the Union Savings Bank of Boston. . . . **Jim Biggane** has been promoted from manager of industrial engineering to manager of manufacturing at Maytag. He moved to Maytag from Rock Island Arsenal where he was officer-in-charge of the tank and automotive vehicle manufacturing programs during World War II. . . . **Tom Hickey** has received a "Superior Performance Award" from the Department of Commerce for his work as a supervisory ex-

aminer at the Patent Office. . . . **Henry Nelly** reports that he retired in June, 1962, and is now living in Weaverville, Calif., devoting his time to hunting and fishing. He has four children, a son and daughter in college and two sons approaching college age.

**George Nakashima** is still designing and manufacturing furniture in New Hope, Pa. His daughter Mira is a senior at Radcliffe and son Kevin attends the Budsingham Friends School. . . . **Orm Lisak** has moved from Kaiser Engineers to the Department of Public Works, city of Mountain View, Calif. . . . **John Newsom** is Central Florida distributor for Kendall Refining Company lubricants. He manages to spend a week each month fishing from a houseboat in the Everglades area. He is serving his second term as Orlando city commissioner. His three children have all graduated from college: John, Jr., A.B., Emory, M.A., Chattanooga; Jane, A.B., Florida State; Judy, A.B., Chattanooga. . . . Changes of address: **Trevor K. Cramer**, Wallace Press, Inc., 444 West Grand Avenue, Chicago 10, Ill.; **D. Tullis Houston**, 94 Academy Street, Newark 2, N.J.—**Gordon K. Lister**, Secretary, 530 Fifth Avenue, New York, N.Y.

## '31

It was a pleasure to see **Dave Buchanan** at a recent luncheon meeting of the New York Tech Club. He and his family drove to California during their vacation, went skiing en route, and visited his daughter, who likes that wonderful California weather. . . . **Dick Kropf** made the headlines again when he was the 14th recipient of the Harold DeWitt Smith Memorial Medal given by Committee D-13 of the American Society for Testing and Materials. The medal is awarded annually by the society for outstanding achievement in the science of textile fiber utilization. . . . A news item in the Boston Morning Globe told of **Joe Lyman's** activities since leaving Tech. Joe developed the frictionless bearing for his brother Frank, founder and president of Cambridge Thermionic Corporation, filed 25 patents on gyroscopic instruments, flight trainers, radar and flight instruments while at Sperry Gyroscope Company, and formed two companies—Aero-Nautical, Inc. and Lyman Laboratories. . . . **John MacBrayne** has been appointed chairman of the Engineering Division for 1963 of the Technical Assn. of the Pulp and Paper Industry.

**Chuck Starr** has been elected a director and vice-president of Esso Research and Engineering Company, in charge of general administration. . . . Enjoyed seeing our prexy **Howie Richardson** again recently at lunch. He seems to be thriving as vice-president of General Dynamics. . . . I have decided it's a small world. While in London recently, **Ralph Cross**, '33 (another DU at Tech), and his wife had dinner at the table next to me, and the next evening **Lazare Gelin**, '28, sat next to me in the theatre. . . . New addresses reported are **Vito F. Cappello**, Gulf Oil Corporation, P. O. Box 1166, Pittsburgh 30,

Pa. **John E. Spalding**, 110A Market Avenue, Port Edwards, Wis.—**Edwin S. Worden**, Secretary, 35 Minute Man Hill, Westport, Conn.; **Gordon A. Speedie**, Assistant Secretary, 90 Falmouth Road, Arlington 74, Mass.

## '32

**Robert B. Thompson**, Course XI, has been named director of project engineering at Dorr-Oliver, Inc., Stamford, Conn. Since joining the company's research operations in 1936, Robert has been engaged in the application of fluid bed processing techniques to industrial uses and has headed Fluo Solids engineering and sales since 1955. The family lives at 12 Sturges Road, Wilton, Conn. Daughter Nancy is a senior at Wheaton College and daughter Jane is a freshman at the University of Connecticut. . . . **Dr. Lester N. Stanley**, Course V, earned the special award of the board of directors of General Aniline and Film Corporation for the development of an improved line of new dyes for dacron. Les is with the Dyestuff and Chemical Division and lives at 46 Rowland Avenue, Delmar, N.Y. . . . Professor **Manson Benedict**, Head of M.I.T.'s Nuclear Engineering Department, presented a paper on isotope separation principles at the Los Angeles meeting of the American Chemical Society and Professor **Bernard S. Gould**, now professor of biology at M.I.T., co-authored a paper on collagen biosynthesis presented at the Atlantic City meeting of the Societies for Experimental Biology. . . . Only recently did we learn of the death of **Edward H. Thorne** on November 24, 1962, from his widow who resides at 9527 Highland Avenue, Blue Ash, Ohio. . . . The death of **Russell C. Pratt** on April 25, 1963, must also be reported. His most recent residence was 18 Summit Avenue, Somerville, Mass.

This brings to a close the publishing year of The Review, and, therefore, wipes out this column as means of communication between class members until next November. I am confident that the U.S. Postal Department will continue to operate during this interim period, so during the summer you might write to any of the class officers listed in last November's issue, or more directly—just write to each other. These monthly class notes have not been able to bring you information about more than a fraction of the members of the class, but if they awaken some memories of the friends you made back in 1928 to 1932, and stimulate you to look some of them up this summer, they will have served as something more than a news medium of very poor coverage.—**Elwood W. Schafer**, Secretary, M.I.T., Room 10-318, Cambridge 39, Mass.

## '34

Your secretaries receive a steady flow of Alumni Register change of address forms from the Institute advising us of



our classmates' changing addresses. Most of the changes reflect straightforward moves from Ohio to California and Michigan to Florida, but here and there are some really exotic moves. Two recent ones are those of class president **Henry B. Backenstoss** from Washington, D.C., to the Ministry of Commerce and Industry, Riyadh, Saudi Arabia, and **Edward L. Asch** from Michigan to de Villardin #8, Pully, Switzerland. . . . I have just received word from the widow of **James H. Burnham** informing us that he died about one year ago. I do not think this has been mentioned in our class notes. Our belated sympathy is extended to Mrs. Burnham. . . . A news item from Paducah, Ky., speaks of **Bernard N. Stiller** as Paducah area manager of the Atomic Energy Commission and active in the spring of 1963 in extracurricular Red Cross fund-raising. Stiller, his wife Thelma, and their four children live at 285 Sycamore Drive, Paducah.

**Bertram Hellmuth**, our sometimes lost classmate, appears again to have returned from his mysterious travels. His new responsibilities make it doubtful that he will be able to attend our 30th Reunion in June of 1964. This secretary still hopes to catch Bert during one of his "riding high" periods and convince him to give a new building for something or other to the Institute. . . . **Warren L. Towle** has recently been named by Globe Union, Inc., of Milwaukee, Wis., as manager of physical chemistry in the corporation's newly created applied research group. He has until recently been director of process development at Mallinckrodt Chemical Works, St. Louis, Mo. . . . Our Hong Kong classmate, **Po Ting Ip**, nickname Pete, writes to tell me that he will be coming to the U.S.A. in the summer with his wife and daughter and, even though this is not a reunion year, I hope that it will be possible for him to see at least some of his classmates. I do not have his itinerary and so cannot include it with these notes, but I will be glad to serve as a clearing house for information if you wish to help make his visit to America a pleasant one.

The next issue, November, 1963, will start the fifth year of our multi-secretary operation, and we are grateful to the support that you have given in providing occasional warm and informative letters to spice our notes.—**Malcolm S. Stevens**, Secretary, 9 Glenfield Road, Barrington, R.I.; **J. P. Eder**, Secretary, 1 Lockwood Road, Riverside, Conn.; **G. K. Crosby**, Secretary, International Nickel Company, 67 Wall Street, New York 5, N.Y.; **Harold E. Thayer**, Secretary, 415 West Jackson Road, Webster Groves 19, Mo.

# '35

Our class had considerable representation at the M.I.T. Corporation dinner at the Waldorf on May 7. Included were **Bill Abramowitz**, **Bissell Alderman**, **Rufus Applegarth**, **John Benson**, **Charles Bowen**, **Bill Buechner**, **James Craig**, **John Demo**, **Carl Floe**, **Dick Hughes**, **Phil Johnston**, **Ed Loewenstein**, **Wes Loomis**,

**Allan Mowatt**, **Bernie Nelson**, **Henry Ogorzaly**, **Nelson Thorp**, and **Max Wasserman**. I found the best way to find people was to locate them at their numbered tables between courses. . . . **Ned Collins** is still at it and his fourth letter to the "lost sheep" went out May 1. However, here are two more letters which resulted from his third try for information. **George Morrisetti** wrote from his home at 407 Kingston Avenue, Louisville 14, Ky., as follows: "Your letter was most welcome. Since graduating from Tech in 1935, I must admit that I have not written very often. So the year we left M.I.T. will be the best place to start. In 1935 I went to work for a U. S. Steel shipyard in Kearny, N.J. In 1940 I transferred to Todd-Pacific Shipyards in Seattle, Wash. During World War II, I was in the Army Transportation Corps and spent most of the time on naval architecture and marine engineering work at the Seattle Port of Embarkation and in the Transportation Research and Engineering Command. After World War II, I worked for Jones and Laughlin Steel Corporation, primarily on engineering for river towboats and barges and for Great Lakes vessels. During this time I obtained my master's degree from the University of Pittsburgh. An opportunity to go to South America came up in August, 1951. My family and I spent the next two years in Concepcion, Chile, where my wife took a course in American Literature taught in Spanish by an Englishman at the University of Concepcion. After returning from South America, I came with the Reynolds Metals Company at Richmond, Va. A short time later I transferred to Louisville, Ky. Several years ago I was in Corpus Christi, Texas, working with our classmate **Don Wood** on river transportation equipment for Reynolds. Last year I went to Bologna, Italy, where Reynolds was making a study of an aluminum die casting plant. At present time I am at Reynolds Louisville Plant 14, which makes fabricated aluminum parts such as tubed sheet evaporators for refrigerators and other heat exchanger equipment. In the future, I will write more frequently and less biographically. Thank you for your letter." It is good to hear from you, George, and do make it soon again. . . . A brief note came from **Gustav Maass**, Box 356, Route 3, Wayzata, Minn., promising more later: "I enjoyed reading the results of your efforts in 1935 Class News and I certainly commend you for the intensity of this effort. The time is not opportune, however, for an obituary from me. I am in the process of changing the conditions in which you would be interested and think this is just not the time to file. I will do better for you later. Good luck with the project."

I am sorry to report the deaths of two of our classmates within a week of each other on opposite sides of the Atlantic. **Roger E. Needham**, construction engineer at the U. S. Information Agency's radio station in Liberia, died April 9 in the hospital at Monrovia after a brief illness. He is survived by his wife Kathryn Brown and their three sons, Donald, 22, Christopher, 16, and Charles, 10. . . . **Re-**

**nato F. Iodice**, Manager of Engineering for the Marine Department of Gulf Oil Corporation, died April 2 at his home, 2640 Elm Drive, North Bellmorn, L.I. He leaves his wife Marian, and daughter Carol.

The third Annual Class Golf Tournament is under way with 18 entries. Defending **Bill Barker** meets **Art Marquardt** in first round play and **Hal Bemis**, 1961 Champion, meets **Allan Mowatt** in one of four preliminary rounds being played. Other preliminary matches include **Bob Forster** versus **Ellis Flink**, **Sam Brown** versus **Henry Ogorzaly**, and **Gerry Rich** versus **John Kiker**. Other first round matches pair **Bob Granberg** and **Leo Beckwith**, **Les Brooks** and **Gordon Scowcroft**, **Paul Daley** and **Dick Bailey**. **Ham Dow** and **Sid Grazi** play winners of the preliminary rounds. It looks like an interesting summer with the champion decided by October 15. . . . How about letting your good intentions turn into action in the next two months and write to me or any of your regional secretaries before Labor Day.—**Allan Q. Mowatt**, Secretary, 11 Castle Road, Lexington 73, Mass.; Regional Secretaries: **Edward C. Edgar**, Kerry Lane, Chappaqua, N.Y.; **Hal L. Bemis**, 510 Avonwood Road, Havertford, Pa.; **Edward J. Collins**, 904 Merchandise Mart, Chicago 54, Ill.; and **Gerald C. Rich**, 105 Pasatiempo Drive, Santa Cruz, Calif.

# '36

It is with regret that we note the death on January 28 of **Harold W. George** of Pacific Palisades, Calif. To his family the class extends sincere sympathy. . . . In March **Robert Leventhal** appeared as a guest columnist in the Boston Globe while the real estate editor was on vacation. The title of his column was "Wanted: More Office Space in Downtown Boston." . . . **Paul Robbins** addressed a meeting of professional engineers in Minneapolis in February. His after-luncheon talk was entitled "Roots, Shoots and Fruits." . . . The Harvard School of Public Health has announced the appointment of **Melvin W. First** as associate professor of industrial hygiene. His special interest is harmful dust particles and other air contaminants from industrial plants. He has previously served as a lecturer at M.I.T. and New York University. . . . This month there is the usual number of address changes—some business and some home addresses: **Joseph W. Epply, Jr.**, Wildcat Valley Farm, Jackson, N.H.; **Bill Garth's** Compu-graphic Corporation, 90 Main Street, Reading, Mass.; **Jean Leman**, Candiac Development Corporation, 9 Montcalm Boulevard, Candiac, Quebec; **Spencer Mieras** to 323 Audubon Trail, Watersholde Park, Fort Wayne, Ind.; **Charles Milone** at the Goodyear Atomic Corporation, Box 628 Picketon, Ohio; **Arthur Peel** to 471 Lyman Road, Wolcott, Conn.; **John J. Petrossi, Jr.** to 3225 East Avenue, Rochester, N.Y., and **Daniel Rhee** to 500 Indian Avenue, Middletown, R.I. . . . It seems strange to write



this and know that you will be reading it after Alumni Day. It is too bad that the publication schedule is such that news from that source has to wait until fall.—**Alice H. Kimball**, Secretary, 20 Everett Avenue, Winchester, Mass.

## '37

"The Beauty of Our 50th State—Hawaii" was the subject when **James Ewell** spoke to the College Club at the Cincinnati Women's Club. Jim has been with the Procter and Gamble Company for more than 25 years. From 1951 to 1953, he was director of manufacture for Thomas Hedley and Company in England, after which he returned to Cincinnati. He is vice-president, manufacturing and employee relations, and a member of the board of directors. He has been in many community activities. . . . President Kennedy recently announced his intention to appoint former Representative **Frank Kowalski, Jr.**, a member of the Subversive Activities Control Board. Frank was elected congressman-at-large from Connecticut in 1958 and re-elected in 1960. He is married, has two children, and makes his home in Meriden, Conn. . . . **George A. Siegelman** has been named corporate director of engineering, Olin Mathieson Chemical Corporation. George, who formerly was vice-president-production, in the Organics Division, will still be located in the corporation's headquarters, 460 Park Avenue, New York. He joined Olin in 1957 as an executive for operations and construction engineering in the former Energy Division. He later was named director of research and engineering at New Haven, Conn., and then director of operations for explosives at East Alton, Ill.

Following are some notes from class members whose biographical information arrived too late to be inserted in our 25th Reunion book. **Philip Short**, 35 Meadowview Road, Milton, Mass.: "After graduation, got job with Shell Development Company in California. Had a wonderful time out there. I left after a few years, returned to Boston and worked for Bethlehem Shipbuilding in Quincy and in Hingham as chief radiographer. I left after a few years to go into business for myself as a wholesale greeting card distributor and am now president of Allied Greeting Cards, Inc., 842 Blue Hill Avenue, Dorchester, Mass. My daughter, Leslie, graduated with honors from Milton High School and is going to Radcliffe—the first girl in seven years accepted from her school and the only one this past year. She received a score of 800 out of 800 in the math achievement test and belongs to the National Honor Society. My son is doing very nicely in school. My wife, Frances, is very active in O.R.T., and a member of the national board. My hobbies?—I have interest in a couple of harness racing horses and in numismatics."

**Sumner Yale Andelman**, M.D., of 3853 South Florence Place, Tulsa, Okla., recently wrote. He and Florence have four children, Lani, 19, at Wellesley Col-

lege, Alice, 17, Julie, 12 and Ross, 6. Sumner is a physician whose specialty is internal medicine with a sub-specialty, rheumatology. He wrote, "My year at M.I.T. in the Graduate School of Biology and Public Health, sandwiched between five years at Harvard and the University of Buffalo School of Medicine where I graduated in 1941, was of tremendous value to me professionally and happily memorable. Offices held: medical director, Northeastern Oklahoma Chapter, Arthritis and Rheumatism Foundation, since 1949; medical director, Recreation Center for the Physically Limited, Tulsa, since 1956; president, Oklahoma Rheumatism Society, 1951-52, 1956-57; vice-chairman, Interchapter Medical and Scientific Committee, National Arthritis and Rheumatism Foundation, 1959-60, chairman, 1960-61. Member Tulsa County Medical Society, Oklahoma State Medical Association, American Medical Association, American Congress of Physical Medicine, American Rehabilitation Association, American Heart Association, American Geriatrics Association, New York Academy of Sciences, Alpha Omega Alpha Honorary Medical Society, Phi Lambda Kappa Medical Fraternity, Tulsa Urban Associations, Tulsa Philharmonic Association, Tulsa Chamber of Commerce, Oklahoma Heart Association. I served my internship at Walter Reed General Hospital 1941 to 1942 and then was in the regular Army 1942 to 1947. During this time I saw service with the 38th Infantry Division in the Pacific, participating in the campaigns of New Guinea and on Leyte and then on Luzon. Our outfit recaptured Bataan, Clark Field and many other parts of Luzon. I returned to the States on V-J Day in 1945, with the rank of major, and took post-graduate training in internal medicine at the Army-Navy General Hospital in Hot Springs, Ark. It was there that I became interested in rheumatic diseases and decided upon this field as my specialty. After leaving the Army in 1947, I entered private medical practice in Tulsa and have remained here to date, continuing in the specialty of diagnosis and treatment of rheumatic diseases. My hobbies are golf, swimming, sculpture and music."—**Robert H. Thorson**, Secretary, 506 Riverside Avenue, Medford, Mass.; Professor **S. Curtis Powell**, Assistant Secretary, Room 5-325, M.I.T., Cambridge, Mass.; **Jerome Salny**, Assistant Secretary, Egbert Hill, Morristown, N.J.

## '38

We have word that **Carl Olsson** died in July, 1961. At the time of his death, he was a director and vice-president and general woodlands manager of the Chesapeake Corporation of Virginia. We also have been informed of the death of **Hugh Christison**, but we have no details concerning the circumstances. . . . A news clipping indicates that B. C. Hydro has appointed **Gordon Morris** as manager of the Authority's Peace River project. Gordon, who was formerly general manager of Perini Pacific Ltd., is located at the

authority's headquarters in Vancouver, B.C. . . . Other new assignments are that of **Willard Roper** as district engineer in charge of the U.S. Corps of Engineers office in Louisville, Ky., and that of **Ingenue Heckenbleikner** as a vice-president of Carlisle Chemical Works, Inc. . . . **Ollie Kangas** is now operations manager of Esso Research and Engineering Company.

**Joseph Kotanchik** is author of an article "Facilities for High-Temperature Flight Environment Simulation" in the January, 1963, issue of "Aerospace Engineering." He is assistant chief of the Systems Evaluation and Development Division of the Manned Spacecraft Center, NASA. . . . Professor **Reinhardt Schuhmann**, who is head of Purdue University's School of Metallurgical Engineering, is actively engaged in exploring the broadening of thermodynamics to cover quantitative relationships within non-equilibrium systems. . . . **Cliff Nelson** writes: "I obtained a Ph.D. degree in engineering and physiology from the University of London in 1953, and am now doing research in electrocardiology at Maine Medical Center in Portland. Have Research Career Award from National Institutes of Health, which is virtually a life-time research grant. Have two children: Susan, who is just entering Nasson College, and Lars, age 12. Would like to hear from classmates who are ham radio operators (others also, of course)." —**David E. Acker**, Secretary, Arthur D. Little, Inc., 1424 Fourth Street, Santa Monica, Calif.

## '39

**George A. Schroeder**, X, formerly president of his own firm, Schroeder Industries, Inc., of Woburn, Mass., has joined Clipper Ship Products, Inc., of Waltham, as executive vice-president. George, according to a news release in Boston's "Yankee Grocer," will supervise the manufacturing and the research and development of new and better coffee products. The news item went on to say that George supervised the building of the first production plant in the country to manufacture liquid synthetic rubber in 1945. He has designed and supervised the building of an instant coffee plant using a high vacuum drying process, and a frozen orange juice concentrate plant in Florida. In addition to forming his own firm, he has done consulting work for national food companies. He is a member of the M.I.T. Club of New York, and of the University Club of Chicago. He has three children, and his hobby is cross-breeding horses. . . . **Harold Chestnut**, VI-A, who is control systems engineer at the General Electric Company's Advanced Technology Laboratory in Schenectady, N. Y., recently spoke at a meeting of the Institute of Electrical and Electronic Engineers in Pittsfield, Mass. Hal's topic was "Systems Engineering." Hal joined G.E. in 1940. In 1954 he was appointed ordinance engineer, and in 1955, project en-

gineer, F-104. He was promoted to the general engineering lab, now the advanced technology lab, in 1956. Currently, Hal is president of the American Automatic Control Council.

Professor **A. Richard Williams, IV-G**, is professor of architecture in charge of graduate design, at the University of Illinois, in Urbana, Ill. Professor Williams recently spoke on the topic "Architecture as it deals with the Appearance and Function of Shelter in Cities Throughout Europe" to the American Association of University Women, in Bloomington, Ill. Williams, an associate of the firm of Lundeen and Hilfinger, has designed Bloomington High School, St. Matthew's Church, Bloomington Federal, and the new City Hall. And a recent project is the College of Education at the University of Illinois. . . . The 10th Weather Radar Conference of the American Meteorological Society, held in April in Washington, enjoyed two '39ers on its program, both from Course XVI. **Roland J. Boucher** spoke on "Digitized X-Band Radar Echo in a Ten-Mile Square and the Occurrence of Precipitation." And **Raymond Wexler** co-authored the paper "Rainfall Determination from 0.86 and 1.87 cm Radar Measurements." Both Boucher and Wexler are from Aron Laboratories.

And here's word of **Lawrence F. Caven-dish, VI-A**, according to a clipping from the "Niagara Falls Gazette," thoughtfully sent directly to me by William H. Latham, '26. The clipping described the activities of the 29th annual LaSalle Children's Field Day held on June 29; it was expected to attract an estimated 15,000 children. Larry is the genral chairman of this year's affair, sponsored by a volunteer committee of LaSalle residents and supported by financial contributions of area residents and businessmen. In sending along the welcome clipping, Bill Latham added that "Larry also did a fine job on the Alumni Fund Campaign." Our thanks to Bill for his news, and our commendations to Larry for his fine community spirit.

Every once in a while—not often enough, to be sure, but nevertheless very welcome—comes a response to every class secretary's frequent plea for news of classmates. In the hopes of further generation of such news items, I will quote verbatim this letter from **John S. Hamilton, X**, Manager of Packaging Industry Sales, of the Aluminum Company of America. Jack, from Pittsburgh, wrote: "Dear Oz: Hope you will not be too shocked by this 'voice' from the distant past. I am an avid reader of your very fine column. Several months ago you suggested that company bulletins might be of interest, and I am consequently attaching the 'ALCOA Newsletter' for April, 1963, and have put you on the mailing list. During my entire 24 years with ALCOA it has seemed as though we have constantly been on thresholds of new breakthroughs in uses for aluminum. Today's most exciting news is packaging. Having been no doubt the most neglectful of class Alumni, I am planning to get back to the 25th. The aging process causes one to reflect on past won-

derful friendships. Sincerely Jack Hamilton." Thank you for your news, Jack, and thank you also for the compliment on this monthly column. It isn't often that such comments come along!—**Oswald Stewart**, Secretary, 31 Birch Road, Darien, Conn.

## '40

The government works in devious ways—some of them mysterious. Our class is now the proud owner of an employer identification number. This valuable item is No. 52 6039396. The occasion for this important piece of information is that we have a savings and loan account and all owners of savings and loan accounts or bank savings accounts are required by government statute to have either a Social Security number or an employer identification number. Since the class has long since retired, it is not qualified to obtain a Social Security number. . . . **Divo Tonti** was named "Man of the Year" at a Charity Ball of the Bergen County, N.J., Y.M.H.A. Divo was on the board of governors of the Y's Health Center, and chairman of its Home Camp Building Committee. He continues to do outstanding work as the executive director of the New Jersey Highway Authority. . . . **John Muller**, living in Antigua with his wife Fran, has created a personal "peace corps" with the help of another American, Arthur Smith of Miami, Fla. Antigua, located 400 miles southeast of San Juan, Puerto Rico, is a semi-tropical isle surrounded with coral reefs and boasting coconut palms, yams and the exotic flowers of the tropics. The land was first visited by white men in 1493, and old buildings and monuments dot the island, standing among abandoned sugar mill towers.

John was sent to Antigua as superintendent and resident engineer of a large construction project for Macomber Enterprises. The additional project of educating natives was begun when at the request of one of them, Muller asked the home office of the Macomber firm to send textbooks. Several Antiguans, impressed with American engineering techniques, had petitioned John to get them some books from the States so that they might learn about blueprinting. After the request for books had been filled, John went into a regular schedule of evening classes. He was well rewarded with a large attendance of interested and ambitious men. Sumner Sherman recently stated "John Muller is singularly fitted for the work he was sent to do, and even more suited by temperament for the work he is doing with the Antiguans. I have seen proof of John's ability. I have watched men sit in makeshift classrooms, converted stock rooms and recently in an English village school with gasoline lanterns for light.

"Men who have worked a full day walk many miles to class and unwrap a textbook covered with cheap brown paper. I have watched them puzzle out intricate blueprints and literally sweat over a practical problem in plumbing. John is blessed with pupils eager to learn." From

its beginning a little more than a year ago, the classes have expanded to three evenings a week. This entire task has been accomplished without payrolls, bills or any form of publicity. Token payments for books were set just high enough to discourage the merely curious, but well within the means of really interested pupils. No news releases, Congressional speeches or new taxes were required for this educating venture. It needed only an inclination to help, supported by a large American corporation with the exclusion of gimmicks and politics. Summing up his feelings on the project, Sherman said, "I dug a deep well of admiration for this ordinary 'guy' from Arlington, who admitted privately to me before I left, 'I'm having a ball.'"

**Sam Silver**, Director of Research of the Space Science Laboratory of the University of California, was awarded the honorary degree of doctor of science by Temple University. Sam was cited as "having probed the depths of knowledge . . . in space science, the newest realm of exploration." . . . **Louie Michelson** of Bryn Mawr, Pa., has been named Manager of the Nimbus Project Section of the General Electric Space Craft Department in Valley Forge, Pa. His job includes direction of work on a sophisticated weather satellite scheduled for launching this year.—**Alvin Gutttag**, Secretary, Cushman, Darby and Cushman, American Security Building, Washington 5, D.C.; **Samuel A. Goldblith**, Assistant Secretary, Department of Food Technology, M.I.T., Cambridge, Mass.

## '41

**Richard F. Cottrell** has been named assistant manager of Aerojet-General Corporation's solid rocket plant in Sacramento, Calif. . . . **Howard O. McMahon**, senior vice-president of Arthur D. Little, Inc., Acorn Park, Cambridge, Mass., has been appointed a director and member of the executive committee of the board of directors of that company. Dr. McMahon is in charge of the company's Research and Development Division. He was responsible, with Professor Samuel Collins of M.I.T., for the development of the ADL-Helium Cryostat. In 1951 the Franklin Institute awarded him the Edward Longstreth Medal for this work. The following year the American Ceramics Society gave him the Frank Forester Award for work in the field of thermal radiation from heated glass. . . . **Sigmund Fritz** is the author of a fine article on "Research with Satellite Cloud Pictures" taken by the Tiros series of satellites. The article shows how experiment and theory come to bear on the nature of the hydrodynamic and thermodynamic processes implicit in the cloud pictures that Tiros produced. It appeared in the April, 1963, issue of the "Astronautics and Aerospace Engineering" magazine. Sigmund is chief of the Meteorological Satellite Laboratory. He joined the U.S. Weather Bureau in 1937. He is a graduate of Brooklyn College and received his M.S. and Ph.D. degrees from M.I.T. under Weather Bureau scholarships. He



served as an aerologist with the U.S. Navy for four years and has written articles on solar-radiation problems and results of meteorological satellite observations.

**David S. Weddell** has been appointed director of development for Monsanto Chemical Company's Overseas Division; he was formerly assistant director of development. Dave received his B.S. in chemical engineering from Pennsylvania State University in 1938 and his Sc.D. in 1941 from M.I.T. . . . The Annual Get-Together of the Class in the New England area was held at the home of Marge and **Mitch Marcus** in West Newton on the evening of April 26. As a change from other years, there was no planned program. This proved to be helpful in promoting the interchange of ideas among those present. Cocktails and a buffet supper provided just the right ingredients for a most enjoyable and successful reunion. It was particularly pleasant to see a number of new faces attending the event this year. Among those present, in addition to the hosts, Marge and Mitch, were Ed and Natalie Marden, Bud Ackerson, Leona and Bud Zarsky, John and Lora Hermistone, Mike and Pat Driscoll, Johann and Sis Andersen Ed and Alice Beaupre, Walt Kreske, George and Estelle Hite, John and D McLeod, John and Stacey Pecevich, and Jack and Rita Lyons. . . . Please continue to send news items promptly to any one of the secretaries.—**Walter J. Kreske**, Secretary, 53 State Street, Boston, Mass.; **Henry Avery**, Assistant Secretary, 169 Mohawk Drive, Pittsburgh 28, Pa.; **Everett R. Ackerson**, Assistant Secretary, 16 Vernon Street, South Braintree 85, Mass.

## '42

I didn't have enough material to write a column last month and, I don't have very much this month. So, perhaps, one of my perennial pleas for letters and news is pretty much in order. . . . **Larry Beckley** has been named administrative officer for M.I.T.'s new Center for Space Research. This \$4 million Center will be built on Vassar Street just north of Massachusetts Avenue. Incidentally, \$1 million of the cost will be supplied from the Second Century Fund with the balance coming from the government. (Note: the \$3 million government portion is not included in our Second Century Fund total of \$98 million; no government money is.) Larry has been at M.I.T. since he returned after the war. He has been on the staff of the Aeroelastic Laboratory and assistant director of the Institute's Division of Industrial Co-operation (now called the Division of Sponsored Research), associate director of the M.I.T. Instrumentation Laboratory and, since 1960, executive officer of the Division of Aerospace Research. This is a significant and important new job which Larry goes into, and we all wish him luck!

In my last column I mentioned having seen **Bob Sollenberger** in Puerto Rico. I wonder if many of you noticed in an ad

of the Commonwealth of Puerto Rico in many magazines including the May 4 'New Yorker,' executives of Union Carbide in Puerto Rico speak glowingly of the advantages of living on the island. Bob is quoted as saying: 'Always keep your golf clubs and swimsuit in your car, you'll often want to take a dip or play a round of golf on your way home from work.' That certainly does sound wonderful. . . . **Harry Schwartz** received his master's degree in electrical engineering with us in 1942. Our clipping service sent us an article he wrote for the Ontario 'Electrical Equipment News' where he reported on a Canadian Conference. In a short biographical sketch, it tells us that he is president of Electrodesign, Ltd., in Montreal, a company which he started in 1948. . . . The American Meteorological Society notes that Mrs. **Pauline M. Austin** was chairman of the Committee on Radar Meteorology for the 10th Weather Radar Conference which was held in April in Washington, D.C.

**Paul Hotte** has been made a vice-president of P. R. Mallory and Company. He formerly was president of Mallory Metallurgical Company and this represents a significant advancement for Paul. . . . Last, but far from least, I have a report to make on the former scribe of these notes, our old friend **Lou Rosenblum**. I note in a local Belmont paper that my neighbor was elected editorial vice-president of the Society of Photographic Scientists and Engineers. His training with the Class News will be of great help to him, I am sure, since he will be responsible for all society publications, including the 'Journal of Photographic Scientists and Engineers.' He will also be a member of the board of directors. As I think you all know, Lou is employed as systems engineer at Itek Corporation. Lou always has about 25 irons in the fire and how he keeps them all glowing so brightly is beyond me!—**John W. Sheetz, 3d**, Secretary, Room 3-344, M.I.T., Cambridge 39, Mass.

## '43

**James G. Houser** was named director of Advanced Programs by the Orlando Division of the Martin Company. In his new capacity, he will direct all market research, operations analysis, and engineering aimed at the development of advanced weapons or space systems. His division is responsible for conducting studies to determine the long range product strategy which will best ensure a competitive position for the company in the future aerospace and military markets. Former program manager of the Missile Master and Birdie control systems, which Martin developed for the Nike installations, Jim has been with Martin since graduation, except for three years in the Navy and one year at M.I.T. under a Sloan fellowship, when he obtained his master's in industrial management in 1957. He worked on many of the famous airplanes developed by the old Glenn L. Martin Company, and on the electronic and ground support systems of

all of its early missile projects.

This completes 10 years of notes for your peripatetic class secretary, all of them most enjoyable. I have observed the growth in prestige and stature of our class, as the various members have advanced in industry, science and engineering; I have recorded your marriages, the births of your children, and your wanderings; I have noted your promotions, your writings, and your community activities. Not for posterity, not cast in bronze as a memento to be fingered as an artifact by future generations have these notes been written, but as sand sculptures, built for a moment's notice, only to be washed away by the changing tides of our lives. Yet they serve to remind us that we are corporate, bound together by our common experiences at the Institute; held together, perhaps, by our memories of consuming our intellectual victuals at a common board; rejuvenated, as such, by our reunions. This country lawyer, then, wishes you a happy summer.—**Richard M. Feingold**, Secretary, 10 North Main Street, West Hartford 7, Conn.

## '44

This past month I had the pleasure of attending the Spring meeting of the Fairfield County M.I.T. Club in Westport. The program was very good—"The Investments in Europe." **Clint Springer, XIII '45**, is president in addition to his secretarial duties for his class. While at the meeting I had a chance to talk to **Bob** and **Dorothy Benedict, XIII**; they are very happy living in Greenwich and Bob has not had to be out of the country too much recently. . . . I stopped in to see **Sej Harjes, XV**, at the Port Of New York Authority. Sej is supervising an industrial engineering group and gets into numerous problems of operations research and statistical control. Sej and Janelle live in Long Island, with their two youngsters.

Last fall classmates **Bob Benedict, XIII**, **Tom Carmody, X**, **Bob Cooper-smith, XV**, and I met at the M.I.T. Club in New York. We were discussing various class members and the name of **Roland Benjamin, XV**, came to mind. I was able to contact Roland and he sent the following letter: "Thanks for your letter of 4/14. I have indeed had a change in vocation; in December of 1961 I was ordained a priest in the Episcopal Church by Bishop Barnyard of New Jersey. Since August 1, 1961, I have been the curate at Christ Church, New Brunswick, N.J. To prepare myself for my new vocation I studied nights and weekends for about three years, getting a great deal of reading done while commuting from Scotch Plains to New York City and back again.

"Since my ordination I have been taking a number of graduate courses at the General Theological Seminary in New York. I find my new work both challenging and rewarding. If you ever get down New Brunswick way look me up. I'd be delighted to see you. My home address



is now: 4 Ainslie Court, East Brunswick, N.J. I see **John F. Post, III**, and his wife Jeanette on occasion and exchange Christmas cards with **George D. Woody, II**, and wife Anne, who is in Atlanta in business for himself as a packaging consultant. John is president of his own chemical company making foam plastics and a variety of other products. He is currently living in Chester, N. J. Best regards". These are the last class notes until next fall, I do hope you all have a pleasant summer. If you are driving on the New England Thruway, why not stop and give the Heilmans a call when you see the Sheerwood Island sign.—**Paul M. Heilman**, Secretary, 30 Ellery Lane, Westport, Conn.

## '45

**Dave Trageser** and I have received varied comments on the reunion thoughts projected in Dave's recent Class Letter. For example, **Tom Hewson** likes the idea of a joint reunion with the Class of '44 in place of our own 20th Reunion, while **Julian "Buzz" Busby** of Okmulgee, Okla., favors both a joint reunion with '44 as well as our projected 20th in 1965 at Snow Inn. Some members of '46 have indicated that they too would like to attend a combination affair. Please drop Dave or me a line from your summer Shangri-la giving us your thoughts. Paul Heilman, Secretary of '44, has assured me that any and all '45ers will be welcomed at 44's 20th next June. . . . On Thursday, April 25, **Chris Boland** gave the M.I.T. Club of Fairfield County, Conn., a most inspiring talk on "The American Investor in the Common Market." One could hear a pin drop as Chris talked and answered questions for almost an hour. It was rewarding to hear an expert speak on a timely subject and most refreshing not to hear a brokerage representative mention the name of his firm, even once. Thanks again, Chris. . . . Next Saturday, May 18, several of us will make what now appears as an annual pilgrimage to the Eastern Sprints at Lake Quinsigamund outside of Worcester to watch Jack Frailey's ('44) Tech crews compete against the best in the East. At this moment it appears that '45 will be well represented by Dave and Mary Trageser, **Hal** and **Lois Thorkilsen**, **Chris** and **Jean Boland**, **Fran** and myself plus all the kids able to come—also **Al** and **Billie Bowen**, ex-'45 now '48 (We will have him back in '45 before the day is over!).

Yesterday's mails brought a letter from **Chick Street** indicating that he and **Helene Marie** would not be able to join us as they have the past couple of years. Chick's life appears typical: "The next two weeks are extremely busy for all here, what with getting the boat in the water, PTA commitments, Yachting Association problems, building daughter's Blue Jay, and also occasionally working." Our spies in Rhode Island report brisk Volkswagen sales so **Chick** must be working hard as well. . . . **Robert C. Miller** of Grumman Aircraft on Long Island

will be Sloan Fellow a M.I.T.'s School of Industrial Management next year. Congratulations! Bob, I believe, is our second fellow; **Bob Hildebrand** of Boeing, Seattle, attended Stanford University as a Sloan Fellow in 1962. . . . On March 29, Lempco Products officially announced the Denmark deal of J.J.'s discussed in the May issue of the Review. . . . April 16 brought forth a most pleasant surprise—a telephone call from **Kirk Drumheller** at Idlewild Airport. Unfortunately, I was talking long distance to my treasurer at the same time so our conversation was not as lengthy or comprehensive as desired. Kirk has been with General Electric at the Hanford Works of the Atomic Energy Commission outside Richland, Wash., for the past 12 years. The Drumhellers have three girls and one boy—or do I have these figures twisted, Kirk? I believe this brief conversation is the first communique we have had from Kirk to these 18 years. Plan to stay overnight your next trip, Kirk. A corollary of Kirk's call is the conversation I had with **Everett Vilett**, '22, at the S.C.F. Celebration at the Waldorf on May 7. During dinner Mr. Vilett casually asked if I knew a Kirk Drumheller who almost became a member of his family; i.e., before Dartmouth moved in! It seems that **Jane Vilett**, Wellesley, '47, was the apple of Kirk's eye 18 or 19 years ago!

In his April 25 letter **Buzz Busby** indicated that he had visited **Nick** and **Rosemary Mumford** several months ago; also that he had talked with **George Upton** several times by phone. **Buzz** remains in the oil business, drilling wells for the most part, with an interest in several Texas properties at the moment. For inclusion in the ageing department **Buzz** reports the following: "My oldest boy, **Jeff**, will become an Eagle Scout this next Court of Honor; he is 14 in July. The younger one, **George** (named after classmate **George B. Hetrick** of St. Louis) was 10 last March and is active in the Cub Scouts. **Jeff**, I might add, stands six feet, so I have had to learn psychology to handle the situation rather than the old peachtree switch; as yet I am winning!"

When **Fran** and I returned from Bermuda in mid-March I found a lengthy letter from **Les McCracken** awaiting me. This letter in turn was followed by an hour's visit later in the month while **Les** was in New York attending the I.E.E. convention. **Les**, in part, reports the following: "My teaching at Lehigh goes on and on! Finally, after seven long years I am able to feel the comfort of dealing with a specialized area, information theory, in electrical engineering, which was present in my work-a-day mind during the early 50's when I was at the Naval Research Lab in Washington, D. C. Even now, after teaching logic and switching theory for two years to my seniors in electronics, I find there is no professional demise contemporary or otherwise in the noble profession of which I'm a part. My contemporary professionals in industry, so far, seem to be excellent contact-wise for monitoring the bread-and-butter aspects of electrical engineering!" . . . **George E. McKewen** has moved from Lexington, Mass., to 1710 North Main

Avenue, Sidney, Ohio, some 30 miles south of Lima and 30 miles east of the Indiana line. . . . **Alan G. Mencher's** new address is American Embassy, APO 230 c/o Postmaster, New York City, while one of our other foreign service members **Jim Critchlow** is now in Paris after several years in Munich, Germany. Don't forget the bikini postcard from your summer Shangri-la.—**C. H. Springer**, Secretary, Firemen's Mutual Insurance Company, 420 Lexington Avenue, New York 17, New York.

## '46

We are sorry to be in the position where we have very little news to report, but this is because very few of our readers have been in the writing mood recently. **John K. Pollard, Jr.** sent us a belated Christmas card, or rather a group of them. Each card contained humorous but vital statistics on each of his three boys, two girls, one wife, and himself. Thanks, **John**, and happy August 5 to you. . . . Some clippings from Boston papers tell us that **Roger Sonnabend** has been elected to the board of directors of the Norfolk County Trust Company. Now we all know where to go for loans. . . . **Jan** and I have now lived out here in Indian and buffalo country for a year and a half, after 36 years in New England (**Jan** says make that 27½ years for her) so this summer we expect to take our daughters, 16 and 13, and travel just like tourists all through New England, that is if we can squeeze it in between my activities as tennis chairman and one man tournament committee, as well as my persistent but generally futile efforts to break 90. We hope to see many of you in the East this summer, and don't forget to look for us in the fall in these pages.—**John A. Maynard**, Secretary, 25 Pheasant Lane, North Oaks, St. Paul 10, Minn.

## '48

When these notes are read, our 15th Reunion will be a fond memory. As the notes are written we are still in the process of organizing the affair. Our next issue should give you a full report of what should be a memorable event. . . . Meanwhile, **Robert P. Abelson** has been promoted to full professor of psychology at Yale University as of July 1, 1963. He is a specialist in computer simulation of thinking processes and lectured in that field at a UNESCO seminar in Austria last year. He is also associate director of the Yale Communications Research Project. . . . **Dr. Stanley J. Adelstein** was recently promoted to faculty rank at the Harvard Medical School. He is an associate in anatomy, and in radiology at the Peter Bent Brigham Hospital. . . . **Robert Carbee**, project engineer of the moon vehicle program of Grumman Aircraft Engineering Company, spoke at the annual spring dinner meeting of the six technical societies of Vermont engineers

on April 25, 1963. . . . **Armand V. Feigenbaum**, an official with General Electric Company in New York, has been named chairman of an industrial administration professional advisory council for Union College at Schenectady. Dr. Feigenbaum is manager of manufacturing operations and quality control for G.E. . . . While we are on the subject of General Electric, we note that **Robert P. Frenzel**, previously market development manager for silicon planar transistors, has been named manager of sales for the central region. . . . **Henry S. Gilbert** has been promoted to the newly created position of director of product management and service engineering for Bolton-Emerson, Inc., with responsibilities for co-ordinating and planning the activities of product managers and field service engineers. . . . **Alan F. Kay**, Vice-president of TRG, authored an interesting article in the April issue of 'The Reflector' entitled: "Electrical Design of Space Frame Radomes." . . . **Arthur J. Renz**, an Educational Counselor for M.I.T., represented the Institute at the Sesqui-centennial Anniversary of the Kimball Union Academy on May 18 in Meriden, N.H.—**Richard H. Harris**, Secretary, 26 South Street, Grafton, Mass.; **Harry G. Jones**, Assistant Secretary, 1 Horizon Road, Apt. 1215, Palisade Section, Fort Lee, N.J.; **Herbert S. Kindler**, Assistant Secretary, 128 Elatan Drive, Pittsburgh, Pa.; **Robert R. Mott**, Assistant Secretary, Box 113, Hebron, Maine.

## '49

A letter from our President, **Russell Cox** reports that at the end of March, Linnell and Cox, the latest version of Webb and Knapp, was incorporated. He continues: "With your location now in England it may be difficult for you to obtain class news to maintain the high standard of class notes that we have enjoyed. Also with reunion a little more than a year away, there will be a lot of stirring hereabouts. With this in mind I have asked **Fletcher Eaton** if he would be assistant class secretary to provide you with a listening post on the reunion committee and help keep individual news flowing to you. Fletch would welcome your suggestions as to how he could be most helpful. He will send you news on reunion, the Alumni Day cocktail party, etc. I have heard many compliments on your class notes and I am looking forward to seeing how they come out with an English accent."

George McQueen's letter announced details of the cocktail party that was held on Alumni Day, June 10 at the Faculty Club. We will report on that in the fall issue. . . . **Joseph R. Altieri** of 64 Westminster Road, Scarsdale, writes that he is now chief engineer at Litton Industries (precision potentiometers) at Mount Vernon, N.Y. Prior to this assignment, he and his family (wife Kay and daughter Pamela, 3½ years old) were in Los Angeles for four years where he was also with Litton. Attached to his family are a dog, Jenny, and four cats, Gumbie, Blackie,

Valentina and Diablo. Joe also notes that he operates a ham radio station under the call letters WA2VWR. . . . A press release from Market Facts, Inc., in Chicago, reports that **David K. Hardin**, II, has been elected president of Market Facts. After leaving M.I.T., Mr. Hardin received his M.B.A. degree in marketing and economics from the University of Chicago in 1950. He has been with Market Facts for nearly 13 years. He started as an analyst, became a vice-president in 1956 and was appointed executive vice-president in 1959. Among his client responsibilities were the General Foods Corporation, National Biscuit Company, Ford Motor Company and Dow Chemical. Market Facts is now one of the largest marketing organizations in the United States, billing more than a million and a half during 1962.

From the M.I.T. calendar of events for the week of March 11, we learn that **A. Sheffer Lang** gave a civil engineering seminar "Real time control of railroad operations" and also that he is now director of data systems for the New York Central system.

Your assistant secretary contributed the news of the next paragraph . . . The Belmont Hotel in West Harwich, Mass., on Cape Cod will be the scene of our 15th Reunion in 1964. Descriptive literature should reach all of you in plenty of time to aid in your planning. The following reunion officers have been appointed: Publicity—**Joe Lynch** and **Ed Kerwin**; Hotel and Banquet Arrangements—**Wally Row** and **Kemon Taschioglou**; Finances—**Stan Margolin** and **Harry Lambe**; Program—**Fletcher Eaton** and **Dick Lang**; Registration—**George McQueen** and **Larry Holt**. . . . **Bill Edgerly** was elected to the board of directors of the Boston Manufacturers Mutual and the Mutual Boiler and Machinery Insurance Companies of Waltham, Mass. Bill is treasurer of the Cabot Corporation, Boston-based international manufacturers of carbon black. Bill is also a director of the State Street Bank and Trust Company, a member of the Executive Council of the Harvard Business School Association and of the Alumni Council of M.I.T. In addition, he is currently president of the Treasurers' Club of Boston. . . . **Leonard Schreiber** has been promoted to manager of flight sciences by the Convair Division of General Dynamics in Fort Worth, Texas. . . . **George Sumner**, also at Convair in Fort Worth, has been advanced to manager of support equipment design. Professor **Robert V. Whitman** of the Department of Civil Engineering at the Institute writes in the 'Journal of the Boston Society of Civil Engineers' that "it is possible to construct economical underground facilities which are quite resistant to (atomic) blast loadings." He and two associates describe their work, which is intended to give us better protective structures.

It seems hard to credit that with this issue, your secretary winds up four years of getting out news notes, but the forthcoming 15th Reunion next year proves pretty conclusively that it must be so. Next year news of the reunion and associated events will tend to fill class notes

columns. Don't forget, however, that we are still primarily interested in what's happening to the individual class members. Drop us a note.—**Frank T. Hulsmit**, Secretary, 53, Albert Hall Mansions, London S.W. 7, England; **Fletcher Eaton**, Assistant Secretary, 83 Herrick Road, Newton Center 59, Mass.

## '50

I hope you all have a pleasant summer and will let us hear about yourself so that we can be in business again when the fall alumni news starts up again. Meanwhile, I am certainly glad the end of the year has come for The Technology Review, because I'm just about out of raw material for inclusion in our notes. The end saved us from bankruptcy this time so let's hope we're a little more solvent next year. To help fill the pages I will update you in some of my own pastimes. The most important being that we are expecting a "girl" in early September which will help, we hope, make our 4-year old Peter a gentleman! Also, I'm about to give birth to a book "Unified Operations Management" co-authored with another M.I.T. man and a non-M.I.T. author (we put him on the team so the book would be readable and make sense) which McGraw-Hill should be releasing in September. I co-authored "PERT: A New Management and Control Technique" which they tell me is the fastest selling book in AMA. I think this is because everybody is trying to learn what PERT is, but in any case, since I have not had time to do much reading, I spend the time writing. I hope to hear something from you . . . anything!

**Richard Dobroth** of 1435 Warrington Road is observing the sixth anniversary of the opening of his Deerfield office at 711 Orchard Street. Dick is president of Dobroth Construction Company which is in its 68th year. The company was started by his grandfather in 1895, and both his father and uncle were active in the firm some years ago. . . . **James Geiser** has been promoted to director of engineering for West Penn Power Company. Jim served on the engineering staff at Springdale Power Station, assistant to the chief results engineer at the general office, and staff engineer. He spent a year, 1954-55, at the Oak Ridge, Tenn., School of Reactor Technology. In 1959, he was named assistant manager of research and development, and in May, 1962, was promoted to assistant to the vice-president of engineering. . . . **Warren Ponemon**, President of Lamtex Industries, Inc., Farmingdale, N. Y., has been elected to membership in the Young Presidents' Organization, an international group of young men (and five women) who have become presidents of sizeable companies before reaching the age of 40. YPO now has over 1,750 members in more than 30 chapters in the United States, four in Canada, one in Europe, one in Japan, and several in Latin America.

Again, this month I have some address changes for you: **Robert J. Muzzy**, 108 West Park Ridge Avenue, Appleton,



Wis.; **Robert L. Plouffe, Jr.**, Soundview Lane, New Canaan, Conn.; Dr. **Charles A. Robinson**, 1402 Carroll Brown Way, West Chester, Pa.; Dr. **Enders A. Robinson**, University of Sweden, Institute of Statistics, Uppsala, Sweden; Dr. **Samuel Stephan, Jr.**, 454 Morgan Drive, Lewiston, N. Y.; **Donald S. Thayer**, PO Box 1149, Daytona Beach, Fla.; Dr. **Harrison White**, Harvard University, Department of Social Relations, Cambridge, Mass.; **John H. Blum**, 71 William Morrissey Boulevard, North Quincy, Mass.; **Donald A. Bly**, 1281 Hillside Drive, Lancaster, Pa.; **Emmett H. Bradley**, 124 Andrea Lane, Arcadia, Calif.; **Arthur M. Burrill**, 307 Whitewater Drive, Harrison, Ohio; **Sidney A. Corderman**, 49 Moore Avenue, Binghamton, N.Y.; **Charles W. Dickinson**, 4702 Mt. Longs Drive, San Diego, Calif.; **Warren Fenster**, 5731 Thompson Road, DeWitt 14, N. Y.; **Frank J. Ferrigno**, 84 Stevens Lane, Glastonburg, Conn.; **Richard A. Gnecco**, 77 Longhill Street, Springfield 8, Mass.; **Robert E. Guiffida**, 1140 Stillwater Road, Stamford, Conn. Ray W. Harris, 102 Sears Road, Wayland, Mass.; **Richard A. Hebert**, 2194 Maiden Lane, Rochester 15, New York; **Thomas R. Keane, Jr.**, 3010 Bannackburn Road, Memphis 28, Tenn.; Dr. **Richard Keller**, 5000 North Saginaw, Route #3, Midland, Michigan; **Paul A. F. Mourier-Petersen**, Dorr-Oliver, Ltd., Caixa Postal 2036, Sao Paulo, Brazil, S. A.; Dr. **Mark S. Mayzner**, 15 Sydney Avenue, Deal, N.J.; **Robert L. Miller**, 923 Kathryn Street, Cary, N.C.—**Gabriel N. Stilian**, Secretary, American Management Association, 1515 Broadway, New York 36, N. Y.

## '53

This will be the last class notes column forced upon you by Brother **Wohl**; next fall you may look forward to a new and spicier class secretary. At the moment, I am enjoying the pleasant surroundings of Santa Monica while on a consulting tour with Rand Corporation; small world that it is, yesterday I bumped into **Bruce Murray** while roaming through the Rand corridors. Bruce is conducting research and teaching at Caltech, and is on the Rand consulting staff. . . . **George Fuld** is leaving Baltimore and will be working in Los Angeles; however, his cross country move has been postponed because of illness. . . . **James Duane** recently was honored by the Eta Kappa Nu "Young Electrical Engineer of the Year" award; he is presently manager, aerospace motor and generator engineering for the General Electric Direct Current Motor and Generator Department. As such, he heads the technical effort of G.E. to pioneer, develop and supply dynamic energy conversion equipment to the aerospace industries for use in aircraft, missiles, space vehicles, airborne weapons systems, and ground support equipment. His career record has been long and interesting (and outstanding . . . I wish we had the space to print all of it).

As of September 1, **John Austin** will be leaving the research staff of the Univer-

sity of California and accepting a faculty appointment (assistant professor of sanitary engineering) in the Department of Civil Engineering, University of Illinois. . . . **Richard Cheslow** "retired" from Hooker Chemical Corporation, and has joined the economic evaluation section of the development appraisal department, Atlas Chemical Industries, Inc. . . . **Brian Parker** attended the Third International Meeting in Forensic Immunology, Medicine, Pathology, and Toxicology at London this past spring and presented a paper on toxicology; he still resides in Puerto Rico, and is consultant in criminalistics to the Puerto Rican Commonwealth Justice Department and lecturer at the School of Law of the University of Puerto Rico. . . . **Horace Hearne** switched from DuPont of Canada to the Research Analysis Corporation, a non-profit organization in Bethesda. Apparently, he has completed work toward a Ph.D. in mathematics at the University of Wisconsin. . . . **Ira Eglowstein** is "tooting along" at Westinghouse (in New Jersey I take it) as a design engineer, and is continuing his graduate studies at Stevens Institute of Technology; he also reports two children and one wife. . . . **Jerry Tiemann** completed his doctorate in physics at Stanford University, and has spent the remainder of his time as a physicist at the General Electric Research Labs. (As he puts it, his work is in ". . . advanced gadgeteering.") . . . And so we come to the end. Have enjoyed being secretary, though I would be less than honest if I did not admit that it is a relief to end the five-year tour of duty. Best regards to all. (P.S. Next fall I will be back in Belmont, Mass.)—**Martin Wohl**, Secretary, 3724 Cumberland Street, N.W., Washington, D.C.

## '54

Our brief note this month is to let you all know that I am still alive, but I am beginning to wonder about you. Only one news item has come my way during the past two months. **Tom Gibbs** has taken to writing technical articles, and was co-author of a research report in the February issue of 'Metal Progress.' Tom has been working in the Research and Advanced Development Division of the Avco Corporation in Wilmington, Mass. He is currently on a leave of absence completing his Ph.D. work at Tech. He and his wife have three daughters, according to the latest census. And that is the complete report of the news for this, the last column of the current year. You all have plenty of time now to send me a note about yourself before our next issue in November. I'm settin' here a-waitin'.—**Edwin G. Eigel, Jr.**, Secretary, 4945A Sutherland Avenue, St. Louis 9, Mo.

## '55

Congratulations to **Philip Baltzer** of the RCA Laboratories at Princeton, who in March received one of the Achievement

Awards of his company for research leading to improved ferrites with superior temperature tolerance for computer memories. . . . Also to **Bill Deibel**, whose firstborn, Marjory, arrived in March. The Deibels live in Cleveland Heights near the Eaton Technical Center, where Bill is a project engineer in the field of truck brakes. . . . **Bill Menzies** has been appointed director of research at the Whitin Machine Works in Whitinsville, Mass., moving there from Rhode Island. . . . **Joe Vacca** has moved within Vickers, Inc., to the position of application engineer in the Aerospace Division at Albertson, Long Island. . . . At Automation Management, Inc., in Westboro, Mass., **Marty Gilvar** was one of the designers of a new method of urban transportation, described as a cross-breed between the automobile and rapid transit and proposed as a solution to commutation problems. . . . Several classmates have made long moves recently, we note from the address file. Westward went **George Goepfert** to Whittier, Calif.; **Harry Mogenssen** to Phoenix, Ariz.; and **Lois Wells** to Wenatchee, Wash. Coming back from the West were **Duwayne Peterson** to Grosse Pointe, Mich.; **James Smith** to Bedford, Mass.; and **Allan Klumpp** to Falls Church, Va. **James Simmons** is now serving the Navy in San Francisco. **Robert Murphy**, civilian again, is back in Winchester, Mass.; and **Mike Halpern**, also civilian again, is in Atlanta. Never a dull moment for **Al Glueck**, whose latest address is the Chemical Engineering Laboratory of Cambridge University in England. **Chan Stevens** was spending a good part of this time this winter in Canada, where Stevens Manufacturing Company opened a branch last fall; he is talking of travels to Europe and South America in the spring. Take a moment to drop us a line this summer, be it from Paris or Niagara or just the old desk or lab.—Co-secretaries: **Dell Lanier** (Mrs. J. H.) **Venarde**, 2401 Brae Road, Ardentown, Wilmington 3, Del.; **L. Dennis Shapiro**, Aerospace Research, Inc., 130 Lincoln Street, Boston 35, Mass.

## '56

In the spring, ground was broken for the Student Union and construction is scheduled to officially start in August. A dream on which many of us worked is becoming a reality. . . . **Phil Birbara** is with the Hamilton Standard Division of United Aircraft in Connecticut. . . . **Fred Culick** has been given a three year appointment as an assistant professor at Caltech. . . . **Ed Fox** is a member of the technical staff of Acoustical and Electromechanical Research Laboratory of RCA in Princeton. Recently Ed received an RCA Achievement Award for his work on improvement in the sound quality of records. . . . **John Gignac** is manager of quality control for Polaroid's new color film, Polacolor. . . . **Gordon Kane** has left Edgerton, Germeshausen, and Grier and is now with Diagnostic Instrumentation. . . . **Bill Leitch** is now an associate editor for McGraw-Hill's 'Purchasing



Week.' Bill was married in May and we hope to have more on this later.

**Robert** and **Joan Malster** announced the birth of their second child, Robert Cameron, on March 30. . . . At an April 24 award dinner **Jack Saloma** was named one of the 'Outstanding Young Men of Greater Boston' by the Junior Chamber of Commerce. . . . **Dick Unruh** took a one-year leave of absence from Skidmore, Owings and Merrill and returned to school last fall to earn a master's in architecture from the University of Pennsylvania. Dick was also married in August, 1962. . . . **Nathan Wise** has left Fenwal and is now with Lessells and Associates. . . . I would like to draw special attention to the change in my mailing address which was effective June 15.—**Bruce B. Bredehoft**, Secretary, 16 Millbrook Road, Westwood, Mass.

## '57

I didn't think there would be any news for this month's column, but a few things came in that I think will be of interest. First of all, I learned from **Alan May**, our Treasurer, that he was to marry Marcia Wolfson, a graduate of Boston University, on June 6 in White Plains, N.Y. Marcia was Al's date at the reunion last year. . . . **Bob Rosin** dropped me a line following his return from a honeymoon in Carmel, Calif. (which he described, incidentally, as "quaint and charming and yet cosmopolitan and fun") and passed on some information concerning a number of classmates he met. His letter read as follows: "**Bob Green** ('Shaw' to some) was in our wedding. He now resembles the bearded bard. He spent a year at Harvard Law, then got an M.S.E.E. at Columbia and is now in the computer game with Auerbach Corporation in Philadelphia. He will be teaching programming in a special industrial course in Paris this summer.

At Berkeley, Rosalie and I ran into Miriam Bamford Smith—Mrs. **Hal Smith**. This was a special treat since I have known Mim (a Simmons graduate) since our freshman year. Hal is an assistant professor at California. I also met **Dick Mortensen**, who told me that he and **Dave Larsen** are working on doctorates in electrical engineering at California. I have learned that **Dick Bleiden** is at the Bohr Institute in Copenhagen on some sort of post-doctoral. **Dave Bloomfield** is with I.B.M. in Poughkeepsie. **Ralph** and **Barbara Brown** are expecting their second child and building their first house. They reside in Glastonbury, Conn., where Ralph works for Pratt and Whitney. It was a pleasure to have them here at the University of Michigan while Ralph was completing his doctorate. Let me close by pointing out that Antonia Schuman, who has been responsible for two articles of unusual appeal in 'Datamation', a computer magazine, is in reality Toni Deutsch, '58, who is the helpmate and spouse of good old **Ed Schuman** of our class." Well, that's all for now. The next issue will be out in November. In the meantime enjoy the sun, sand, sea or mountains this

summer and send me a letter.—**Frederick L. Morefield**, Secretary, 17 Everett Street, Cambridge 38, Mass.

## '61

Ira's free postcards paid off and news of '61 really came in. So if you don't see your particular vital statistic now, look for it later and keep sending in your news! . . . **Allen Armstrong** writes: "Following graduation, I worked for the Ford Motor Company in the advanced product study vehicles section of the Engineering Staff. During the summer of 1961, Paul Yaffe, Tibor Stefansky, and Don Morrison were also at Ford in various capacities. After 14 months of work, I decided to enter law school, and came to the University of Illinois College of Law this past September. I expect to specialize in patent work in order to make use of that expensive Course II background. Still single." . . . **Kenneth Chapman** has been teaching at Ohio College of Applied Science since graduation and this August will go to Temple University as acting chairman of the Chemical Technology Program. . . . We "see by the papers" that **Jean duCharme** has joined the staff of the Franklin Institute Laboratories, Philadelphia, where he will work as a research engineer in the Engineering Psychology Laboratory.

**Edward Tucker** completed the Chemical Engineering Practice Program last June, and later the same month married the former Elizabeth Brown of Natick, Mass. He worked for Hercules Powder Company in New Jersey until August when he entered the Army as a second lieutenant. Ed is stationed at Fort McClellan, Ala., and will be there till August, 1964. . . . I can do no better than to quote directly from **Sandy Wagner**: "Wagner, the athlete, is enjoying the teaching of math and science at Browne and Nichols School in Cambridge, where he also coaches football, basketball, and crew. But all his students want to go to Harvard. Due to popular pressure (he's an easy marker and weak disciplinarian), Sandy is returning to B. and N. in the fall." . . . **Michael Wechsler** graduated from the Harvard Business School and went into the Army in June, for six months. "After that I'll be working for Chemical Bank in New York City. In case you haven't heard, **Henry Hamburger**, Course XVIII, is getting married in June. Then he's going to Africa with his wife to serve in the State Department's Teachers for East Africa Program." . . . On June 2, 1962, **Richard Weddleton** was married to Jeanne Marie Delaney of South Boston, Mass. He is studying for a Ph.D. degree in chemistry at Indiana University and will be back in Boston by October, 1963. . . . **Andrew Zeger** writes that he is married to Anne Lyman (Simmons, '63) and has been in a M.S. program in math at the Polytechnic Institute of Brooklyn for the past two years on a teaching fellowship. Summers he works for General Atronics Corporation, located just outside Philadelphia. Many weddings are scheduled for this June and the summer (including

your class secretary's) so let's report them later as accomplished fact.—**Joseph Harrington**, 3d, Secretary, 1 Cherry Street, Wenham, Mass.

## '62

**Jerry Becker**, V, is at the University of Chicago medical school, and has a scholarship. . . . **Jim Beetem**, II, is in the Air Force Officers Training School. . . . **Barry Belkin**, XVIII, is a teaching assistant in the math department at the University of Pennsylvania. **Daniel Beltran-Maldonado**, I, is a teaching assistant at M.I.T. . . . **Harold Benzinger**, XVIII, is in graduate school at Syracuse University. . . . **Grant Beske**, XXI-B, is in M.I.T.'s Metallurgy Department. . . . **John Beusch**, VI, is an Sc.D. candidate at M.I.T. and has an N.S.F. fellowship. . . . **Terry Biefeld**, XVI-B, is working for Douglas Aircraft Company. . . . **Alan Blackington**, VI, is working as a junior research engineer for Melpar, Inc. . . . **Albert Blackwell**, VIII, is on a Rockefeller Fellowship at Harvard Divinity School. . . . **Kurt Bleicken**, XV, is working for John P. Chase and Company in Boston. **Roger Blunt** is a captain in the U.S. Army Corps of Engineers. **Miguel Bocco**, I, is at the Instituto Nacional De Canalizaciones in Maracaibo. **Alexander Bogan, Jr.**, VIII, is a research assistant at Case Institute of Technology. **Bob Brady**, II, is with the U.S. Navy at the New York Naval Shipyard. **Frank Braidech**, IV-A, is an architectural designer for Alsice Homes Corporation. . . . **Steve Brams**, XIV-B, has a research fellowship at Northwestern University in political science. . . . **James Brandely**, X, is in the Wharton Graduate Division of the University of Pennsylvania. . . . **David Brandt**, XVI, is in the Department of the Navy in Washington. . . . **Bill Brehm**, III-B, is a teaching assistant at Cornell University. . . . **John Brenner**, VIII, is at M.I.T. . . . **Gary Brinker**, VIII, is at Cornell University with an L. Prandtl Fellowship. . . . **Jan Brown**, XVIII, is an actuarial assistant for John Hancock Insurance Company. . . . **Charles Bruggeman**, XVI, is a teaching assistant at M.I.T. . . . **Glenn Buckles**, II-B, is in the Graduate School of Business at the University of Chicago. . . . **James Bueche**, XIV-A, is working as a Production Co-ordinator in the Electronic Data Processing Division of Minneapolis-Honeywell. . . . **Ed Burgess**, V, is an instructor in the department of chemistry at Yale University. **Tom Burns**, XV, is in the School of Industrial Management at M.I.T. **Charles Butler**, XVI, is serving his military obligation.

I hope to be hearing from more of you after the summer, when you will be more settled down. Please encourage those '62 mates whom you see regularly to keep the M.I.T. Alumni Association informed of their current addresses and to make their contributions so that they too can receive The Review. Have a good summer.—**Gerald L. Katell**, Secretary, Graduate School of Business, Stanford University, Palo Alto, Calif.

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